Supreme Court, U.S.
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No.

In the

Supreme Court of the United States

TEXAS DIGITAL SYSTEMS, INC.,

Petitioner,

v.

TELEGENIX, INC.,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Whether the Court of Appeals for the Federal Circuit, in conflict with decisions of other Circuit Courts of Appeals, for the first time on appeal, can consider and rely upon evidentiary materials outside of the trial or appellate record.

2. Whether the Federal Circuit's reliance upon evidentiary material outside of the record on appeal, without providing a party opportunity to rebut presumptions raised by those materials, violates the due process clause of the United States Constitution.

3. Whether the Supreme Court should use its supervisory powers to preclude the Federal Circuit from conducting *sua sponte* fact-finding investigations.

PARTIES TO THE PROCEEDINGS

Petitioner

Petitioner, Texas Digital Systems, Inc. ("TDS") is a non-governmental corporate party to the proceedings before the United States District Court for the Northern District of Texas and the United States Court of Appeals for the Federal Circuit.

TDS discloses that it is a Texas corporation and that there are no parent corporations to TDS. Petitioner TDS was Plaintiff in the district court and Appellee in the court of appeals. Further, TDS discloses that there are no publicly held companies which own 10% or more of TDS's stock.

Respondent

Telegenix, Inc. ("Telegenix") is a non-governmental corporate party to the proceedings before the United States District Court for the Northern District of Texas and United States Court of Appeals for the Federal Circuit.

Telegenix, a New Jersey corporation, is a wholly owned subsidiary of Inductotherm Industries, Inc., a non-public New Jersey corporation. Respondent Telegenix was defendant in the District Court and appellant in the Court of Appeals. Petitioner TDS is unaware of any publicly held companies owning 10% or more of the stock of Respondent Telegenix.

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PETITION FOR WRIT OF CERTIORARI

Petitioner TDS respectfully petitions this Court for a writ of certiorari to review the judgment rendered in this case by the United States Court of Appeals for the Federal Circuit.

OPINIONS BELOW

The opinion of the Court of Appeals for the Federal Circuit was issued on October 16, 2002, and is reported at *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002) (App. A at 1a). In an unpublished Order filed December 9, 2002, the Court of Appeals for the Federal Circuit denied Petitioner's Petition for Panel Rehearing and Rehearing *En Banc* (App. E at 84a). The judgment for the United States District Court for the Northern District of Texas is an unpublished decision in *Texas Digital Systems, Inc. v. Telegenix, Inc.*, Civil Action No. 3:98-CV-1537-BF(R) (N.D. Tex. September 28, 2001) (App. B at 49a). The *Markman Memorandum of Opinion and Order* is a published opinion reported at *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 2000 WL 1801849 (N.D. Tex. 2000) (App. C at 55a), which was then amended by published Order, *Texas Digital Systems, Inc. v. Telegenix, Inc.*, Civ. No. 3:98-CV-1537-BF, 2000 U.S. Dist. LEXIS 18360 (N.D. Tex. February 9, 2001) (App. D at 69a).

STATEMENT OF JURISDICTION

The opinion of the United States Court of Appeals for the Federal Circuit was entered on October 16, 2002 (App. A at 1a). The Court of Appeals denied a timely filed Petition for Panel Rehearing and Rehearing

En Banc on December 9, 2002 (App. E at 84a). On February 24, 2003, this Court granted an extension of time until April 8, 2003 to file this writ.

This Court has jurisdiction under 28 U.S.C. § 1254(1) to review the Circuit Court's decision on a writ of certiorari.

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

This case involves the following constitutional and statutory provisions:

1. U.S. Constitution, Amendment V

> "No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation."

2. Supreme Court Rule 10(a)

> "Review on a writ of certiorari is not a matter of right, but of judicial discretion.

A petition for a writ of certiorari will be granted only for compelling reasons. The following, although neither controlling nor fully measuring the Court's discretion, indicate the character of the reasons the Court considers:

"(a) a United States court of appeals has entered a decision in conflict with the decision of another United States court of appeals on the same important matter; has decided an important federal question in a way that conflicts with a decision by a state court of last resort; or has so far departed from the accepted and usual course of judicial proceedings, or sanctioned such a departure by a lower court, as to call for an exercise of this Court's supervisory power[.]"

STATEMENT OF THE CASE

In rendering its decision, the Court of Appeals for the Federal Circuit departed from accepted appellate practice and *sua sponte* considered evidentiary material outside of the record on appeal that was ultimately dispositive. During its *de novo* review of the patent claim construction decision of the district court, the Federal Circuit found and introduced, on its own accord, definitions from a technical dictionary for claim terms that contradicted testimony and other evidence presented at trial and included in the record on appeal, and used those definitions to reverse the trial court's construction of claim terms. Since these definitions

were introduced for the first time on appeal, and since the Federal Circuit refused to rehear the appeal or to rehear the appeal *en banc*, Petitioner never had an opportunity to confront these definitions. The Federal Circuit now stands alone among the Circuit Courts of Appeals in its willingness to go outside of the record evidence to introduce new sources of evidence upon which to base dispositive decisions.

The Federal Circuit's newly-established, unique rule of law will have broad ranging effect, particularly on patent jurisprudence. Every patent case appealed to the Federal Circuit that requires a review of the claim construction[1] is now subject to the introduction of unpredictable sources of technical definitions without the parties having any opportunity to rebut the correctness of those definitions as they relate to the claim. Instead of fulfilling its mandate to provide uniformity to patent law, the Federal Circuit's new rule veers off on a trail of unpredictability – parties can no longer rely upon the record to limit the scope of the appellate court's evidentiary review.

I. Reasons for Granting the Petition.

The Federal Circuit has announced that in its *de novo* review of claim construction, it can and will rely upon technical resources and references (such as technical dictionaries) that are not part of the trial or appellate records. This practice is completely at odds

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[1] Almost half of the published patent appellate decisions have involved claim construction. *See* Christian A. Chu, Empirical Analysis of the Federal Circuit's Claim Construction Trends, 16 Berkeley Tech. L.J. 1075, 1100-04 (2001) (during the period from January 1, 1998 to April 30, 2000, claim construction was expressly reviewed by the Federal Circuit in 179 of 396 cases (45%) having written opinions).

with the other Courts of Appeals, who have long held that they would not consider such extra-record materials during their review.[2]

This is not a case where there was no evidence in the record for the Federal Circuit to rely upon when making its ruling; to the contrary, the extensive record evidence[3] was effectively ignored when the Federal Circuit relied upon the extra-record, technical dictionary definitions it had sought out.

Moreover, this is not a case where the Federal Circuit took judicial notice of any specific fact or definition contained in the technical resources and references. The Federal Circuit could not have taken such judicial notice for myriad reasons, including, again, the voluminous record evidence that conflicted with these technical dictionary definitions.[4]

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[2] A sign of the Federal Circuit's departure from the practice norm is that the decision has been the subject of numerous commentaries at CLE seminars. *See, e.g.*, Robert C. Kahrl, Texas Digital and the Stampede to the Dictionaries, 18th Ann. Intell. Prop. Law Conf., American Bar Assoc. Section of Intell. Prop. Law (April 3, 2003).

[3] During the district court claim construction proceedings, this case was the subject of a three day evidentiary hearing at which both the intrinsic evidence was examined and extrinsic evidence, including expert testimony, was heard. After the district court rendered its *Markman* claim construction decision (App. C at 55a), additional argument and evidence was considered by the court, resulting in the amended *Markman* claim construction decision of February 9, 2001 (App. D at 69a). Respondent also submitted a 35 U.S.C. § 282 notice containing approximately 400 prior art references prior to trial purporting to relate to claim terminology and validity issues that were also subject to trial court review.

[4] *See B.V.D. Licensing Corp. v. Body Action Design, Inc.*, 846 F.2d 727, 728 (Fed. Cir. 1988) ("Courts may take judicial notice of facts of universal notoriety, which need not be proved, and of whatever is generally known within their jurisdictions.") (citing *Brown v. Piper*, 91 U.S. 37, 42 (1875)).

Rather, when bringing in these technical resources and references on appeal, the Federal Circuit necessarily is engaging in fact finding. The Federal Circuit now has decided that it may substitute definitions it finds in a randomly selected, extra-record, "technical" dictionary for the district court's findings as to what disputed terms (i) would have meant to a person of ordinary skill in the art (ii) at the time of the invention.

Accordingly, the Federal Circuit, unlike its sister courts, failed to limit its appellate review to the record evidence, effectively creating a dangerous precedent that permits it to *sua sponte* reach outside the record below to evidence not considered by either party nor the trial court. By going outside the record during *de novo* review, the Federal Circuit effectively created an irrebuttable presumption of correctness in its decision-making process, which was not susceptible to any meaningful challenge by either party (much less the benefit of long-established procedural safeguards).

In addition, permitting appellate courts to go outside the record below violates due process and makes the appellate court an evidentiary fact finder – a role clearly not contemplated for appellate courts and a role demanding the exercise of this Court's supervisory powers to control and correct.

II. Procedural History.

TDS seeks review of a judgment of the United States Court of Appeals for the Federal Circuit. TDS filed suit in the Northern District of Texas on July 2, 1998, alleging that Telegenix was infringing U.S. Patent Numbers 4,734,619, 4,804,890, 4,845,481, and 4,965,561 ("The Havel Patents") by making, using, offering for sale and selling light emitting diode ("LED") based variable

color displays known as Colorgraphix I, Colorgraphix II, and Colorgraphix III. After a three day evidentiary *Markman* Hearing during March 8-10, 2000, the court entered its "Markman Decision" on December 6, 2000 (App. C at 55a), which was subsequently amended on February 9, 2001 (App. D at 69a). Subsequently, after a trial by jury, during August 21-24, August 27-30, and September 4-6, 2001, with the jury's verdict being received on August 31, 2001 as to validity and infringement, and on September 7, 2001 as to willfulness and damages, the trial court entered its Judgment on September 28, 2001 (App. B at 49a). All claims of TDS's four Havel Patents were found not invalid and found to be infringed by the Colorgraphix I, Colorgraphix II, and Colorgraphix III display devices. Telegenix was assessed reasonable royalty damages of $6,000,000, which was enhanced in the amount of $6,000,000, for a total damage assessment of $12,000,000, due to the jury's determination of Telegenix's willful infringement. The trial court also awarded pre-judgment interest in the amount of $3,007,999 and enjoined Telegenix from future infringement of the Havel Patents. Telegenix then filed it's Notice of Appeal to the Court of Appeals for the Federal Circuit.

The Federal Circuit affirmed a portion of the trial court's claim construction, reversed a portion of the trial court's claim construction, affirmed the trial court's ruling on appealed issues of evidence admissibility, and reaffirmed the vitality of this Court's holding in *Wine Ry. Appliance Co. v. Enterprise Ry. Equip. Co.*, 297 U.S. 387, 56 S. Ct. 528, 80 L. Ed. 736 (1936). (*See* App. A at 48a)

As a result of the Federal Circuit's reversal of the interpretation of key claim elements of the Havel Patents, the Federal Circuit held that the claim construction errors committed by the District Court

were prejudicial and vacated that court's decision and remanded for a new trial of both liability and damages (App. A at 39a-40a).

III. The Court of Appeals For The Federal Circuit, In Conflict With Decisions of Other Circuit Courts of Appeals, Should Not Consider And Rely Upon Evidentiary Materials Outside of the Trial or Appellate Record.

A. The Federal Circuit's New Rule Conflicts With The Rule Followed By The Other Circuit Courts.

Until the Federal Circuit's opinion in this case, appellate courts would not consider materials outside the record when rendering decisions. The following cases demonstrate this well-settled principle:[5]

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[5] Although the Second and Seventh Circuits do not have cases with fact patterns sufficient to demonstrate direct conflict with the Federal Circuit's decision, the following decisions show that it is likely these courts of appeals would agree with all the other appellate courts and not the Federal Circuit:

- **Second Circuit:** *United States v. Campbell*, 351 F.2d 336, 341 (2d Cir. 1965) (after declining to judicially notice, on appeal, evidence of Canadian law because "judicial notice should not be used as a device to correct on appeal an almost complete failure to present adequate evidence to the trial court", the court then did not consider the off-record information).

- **Seventh Circuit:** *Lambert Corp. v. Evans*, 575 F.2d 132, 136 (7th Cir. 1978) (after refusing to take judicial notice of facts concerning traditional business practices considering there was evidence on record that such customs were not followed by the very party seeking such notice, the court declined to examine the information that was not in the record).

- **First Circuit:** *Eagle-Picher Indus., Inc. v. Liberty Mut. Ins.*, 682 F.2d 12, 22 n.8 (1st Cir. 1982) (after refusing to take judicial notice on appeal of insurance policy's drafting history due to its disputable nature, the court refused to examine such facts outside the record).
- **Third Circuit:** *City of New Brunswick v. Borough of Milltown*, 686 F.2d 120, 131 n.15 (3d Cir. 1982) (after opting not to take judicial notice of facts concerning the amount of sewage flowing into a plant since judicial notice is not a "talisman[] by which gaps in a litigant's evidentiary presentation...may be repaired", the court would not examine those facts because they were beyond the trial court record).
- **Fourth Circuit:** *Glover v. Cole*, 762 F.2d 1197, 1200 n.6 (4th Cir. 1985) (after finding that judicial notice was an inappropriate device for remedying a failure to present proof at the trial court level, the court refused to go outside the record to consider the additional facts).
- **Fifth Circuit:** *United States v. Judge*, 846 F.2d 274, 276 (5th Cir. 1988) (after declining to take judicial notice of D.E.A. regulations excerpts because their application to the facts was disputable, the court would not examine the evidence since it was not part of the trial court record and to do so would not give the opposing party adequate opportunity to challenge the applicability and administration of the provisions).
- **Sixth Circuit:** *United States v. Bonds*, 12 F.3d 540, 552-553 (6th Cir. 1993) (after refusing to take judicial notice of National Academy of Sciences report criticizing FBI methods of DNA identification because "the Government would be precluded from

rebutting the report with expert testimony" and because "we would not be confining ourselves to *reviewing* the district court's admissibility ruling, but would be making a *de novo* determination based on post-conviction developments or articles," the court refused to consider the off-record evidence)(emphasis added).

- **Eighth Circuit:** *Johnson v. Chater*, 108 F.3d 942, 946 (8th Cir.), *modified*, 116 F.3d 1270 (1997) (after declining to take judicial notice of the weight of a two-gallon gasoline can because taking notice of this evidence would undermine the ALJ's role as fact-finder, the court would not then consider the materials because they were beyond the record).
- **Ninth Circuit:** *NLRB v. Big Bear Supermarkets #3*, 640 F.2d 924, 926 (9th Cir. 1980) (after declining to take judicial notice of letters appended to Intervenor's brief on the ground that Intervenor had failed to establish the information therein was not subject to reasonable dispute, the court would not consider them in its evaluation).
- **Tenth Circuit:** *Am. Stores Co. v. Comm'r*, 170 F.3d 1267, 1270 (10th Cir. 1999) (after opting not to take judicial notice of IRS manuals and other documents considering the information was not widely available, lacked certainty, and because judicial notice is not a tool for allowing a faulty evidentiary presentation to be repaired on appeal, court would not analyze evidence outside the record).
- **Eleventh Circuit:** *Shahar v. Bowers*, 120 F.3d 211, 214 (11th Cir. 1997) (after refusing to judicially notice newspaper articles whose admissibility was uncertain even had they been offered at the trial court and because "the taking of judicial notice bypasses the safeguards which are involved with the usual process of proving facts by competent

evidence in district court," the court would not consider evidence offered for the first time on appeal).

- **DC Circuit:** *Melong v. Micronesian Claims Comm'n*, 643 F.2d 10, 12 n.5 (D.C. Cir. 1980) (after declining to take judicial notice on appeal of unauthenticated materials, such as meeting minutes, because "[j]udicial notice was never intended to permit such a widespread introduction of substantive evidence at the appellate level," the court then refused to consider evidence beyond the record).

The Federal Circuit has now rejected this long-standing principle and has established a new standard by which it will, quite literally, conduct its own factual investigation as part of its *de novo* review of claim construction. This is not now, nor has it ever been, the role of an appellate court. *See, e.g., In re Capital Cities/ABC, Inc.'s App. for Access to Sealed Transcripts*, 913 F.2d 89, 96 (3d Cir. 1990).

It is worthy to note, that in the circumstances under which this Court, appellate courts, and trial courts do consider extra-record dictionaries and encyclopedias, it is when courts take judicial notice in order to refresh their understanding of a term's common everyday meaning.[6] As far as Petitioner is aware this is the first instance where an appellate court has considered a technical dictionary definition that was not

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[6] This Court has held that when judicial notice is taken of a dictionary meaning it is used as an aid to the memory and understanding of the Court. *Nix v. Hedden*, 149 U.S. 304, 306-07 (1893). When a court considers a technical dictionary to reflect what a person of ordinary skill in the art would understand a term to mean, it goes well beyond aiding memory and understanding.

part of the record, of which it could not and did not take judicial notice.[7]

B. The Federal Circuit's Opinion Reverses Its Own Precedent Without Authority.

In order to consider extra-record evidence for the first time on appeal, the Federal Circuit had to abandon its own precedent. The Federal Circuit's earlier decisions firmly established that when construing a patent claim, a court should look first to the intrinsic evidence of record, such evidence being the most significant source of the legally operative meaning of the disputed claim language. *See, e.g., Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). When reviewing the intrinsic evidence, the Federal Circuit looked initially to the words of the claim, as they would be interpreted by one of ordinary skill in the art at the time of the invention, then to the patent's

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[7] Petitioner acknowledges there are other methods for a Court of Appeals to add materials to the record through the correction / modification provision of Fed. R. App. P. 10(e) or through the court's equitable powers. Rule 10(e) was not utilized in the present instance, nor would it have been appropriate for the Federal Circuit to do so. Federal Rule of Appellate Procedure 10(e) is meant first to ensure that the record on appeal accurately reflects the proceedings in the trial court, not to add materials never considered by the lower court. *United States v. Elizalde-Adame*, 262 F.3d 637, 640-41 (7th Cir. 2001). Also, use of Rule 10(e) to supplement the record is ill-advised when the information is disputable and subject to opposition, as is the technical dictionary definition in the present case. *Ross v. Kemp*, 785 F.2d 1467, 1472-79 (11th Cir. 1986). Rule 10(e)'s purpose is not to allow a losing party to add new material to the record in order to collaterally attack the trial court's judgment. *See, e.g., Elizalde-Adame*, 262 F.3d at 640-41. Further, appeals courts rarely use their equitable powers to expand upon the record, and then are also restricted to indisputable, unopposable evidence. *See Ross v. Kemp*, 785 F.2d at 1472-79.

specification and third to the prosecution history, if in evidence. *Id.* The Federal Circuit had held that the specification is "highly relevant to the claim construction analysis" and "usually dispositive" as it is the "single best guide to the meaning of a disputed term." *Id.* If the meaning of a disputed claim term was unambiguous after examination of the intrinsic evidence, then, under the previous rule of the Federal Circuit, it was improper to rely upon extrinsic evidence. *Id.* at 1583.

The Federal Circuit had previously clearly placed technical dictionaries, treatises, articles and expert testimony in the realm of extrinsic evidence. *See, e.g.*, *Bell Atlantic Network Serv. Inc. v. Covad Communications Group Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001); *Spectrum Int'l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378 (Fed. Cir. 1998). The Federal Circuit's opinion in this case breaks with these well-established rules.

1. Dictionaries Redefined.

Rather than treating technical dictionaries as extrinsic evidence, consistent with its precedent, the Federal Circuit abruptly declared that dictionaries (including technical dictionaries), encyclopedias and treatises are no longer considered to be extrinsic evidence. The Federal Circuit held:

> As resources and references to inform and aid courts and judges in the understanding of technology and terminology, it is entirely proper for both trial and **appellate judges** to consult these materials [i.e. dictionaries, encyclopedias and treatises] at any stage of a litigation,

> **regardless of whether they have been offered by a party in evidence or not.** Thus, categorizing them as "extrinsic evidence" or even a "special form of extrinsic evidence" is misplaced and does not inform the analysis.

(App. A at 12a (emphasis added)). While the Court held that technical dictionaries were not "extrinsic evidence" or a "special form of extrinsic evidence," it notably failed to say what technical dictionaries are in the spectrum of evidence.

The Court also reversed the hierarchy of claim analysis, placing technical dictionaries first in line, regardless of whether such dictionaries were offered as evidence below.[8] (App. A at 16a) The Court's pronouncement creates a disturbing anomaly in that the "most relevant" intrinsic evidence, the patent's prosecution history, must have been admitted into evidence by the trial court to be considered by the Federal Circuit,[9] but now general reference materials such as technical dictionaries, encyclopedias and treatises need not be part of the trial court's evidentiary record to be considered. *Id.*

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[8] Unlike a patent's prosecution history that is a matter of public record throughout the life of the patent, secondary resource materials rarely continue to be publicly available throughout the life of the patent. The two secondary source materials relied upon by the Federal Circuit in this case (App. A at 18a, 25a), were only "available" to this Texas-based Petitioner from the library of Purdue University located in Indiana; but, of course, they were not available for check out.

[9] *Vitronics*, 90 F.3d at 1582 ("[T]he court may also consider the prosecution history of the patent, *if in evidence.*") (emphasis added).

While the Federal Circuit has relied previously upon common dictionaries to define non-technical claim terms,[10] it required that *technical* claim terms be construed according to the meaning given by one of ordinary skill in the art at the time of the invention.[11] Now, the Federal Circuit may mechanically substitute a randomly selected "technical" dictionary definition of the Court's choosing, and outside of the evidence on appeal, as the meaning of a disputed technical term without regard to whether, in fact, the selected definition was (i) the meaning one of ordinary skill in the relevant art would assign to the disputed claim term (ii) at the time of the invention.[12] (App. A at 17a-18a)

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[10] *See, e.g., Schumer v. Laboratory Computer Sys., Inc.*, 308 F.3d 1304, 1311 (Fed. Cir. 2002)(common dictionary definition of "or"); *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1343 (Fed. Cir. 2001)(common dictionary definitions of "angular" and "surface"), *cert. denied*, 534 U.S. 1114 (2002); *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1344 (Fed. Cir. 2001)(common dictionary of "portion"); *Kegel Co. v. AMF Bowling, Inc.*, 127 F.3d 1420, 1427 (Fed. Cir. 1997)(common dictionary definition of "assembly"); *York Prod., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572-73 (Fed. Cir. 1996)(common dictionary definition of "substantially").

[11] *See Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1315 (Fed. Cir. 1999)(if claim term is a "term of art, it is given the ordinary and accustomed meaning as understood by those of ordinary skill in the art").

[12] This despite the Federal Circuit's historical recognition of the inherent dangers and limitations of dictionary definitions. *Toro Co. v. White Consol. Indus., Inc.*, 199 F.3d 1295, 1300 (Fed. Cir. 1999) (dictionaries rarely resolve close questions in particular contexts); *Anderson v. International Eng'g & Mfg., Inc.*, 160 F.3d 1345, 1348 (Fed. Cir. 1998) ("[D]ictionary definitions of ordinary words are rarely dispositive of their meaning in a technological context. A word describing patented technology takes its definition from the context in which it was used by the inventor."); *see also, NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1071-72 (Fed. Cir. 2002) (dictionary definition of "coupling" adopted by the parties did not resolve the construction of claim terms).

This random procedure effectively creates an irrebuttable presumption that the Court's selected dictionary definition is the ordinary meaning of the disputed claim term to one skilled in the art at the time of the invention because, of course, the patentee will have no meaningful opportunity after rendition of the appellate decision to rebut the presumption with intrinsic and/or extrinsic evidence.[13]

C. The Federal Circuit's Reliance On Extra-Record Materials Was Prejudicial

In applying this new rule of law, which allows appellate judges to go outside the record and consider evidence not introduced by the parties nor considered by the trial court, the Federal Circuit relied upon technical dictionaries to "define" disputed terms (App. A at 18a, 25a). For instance, it used the *Modern Dictionary of Electronics*, p. 20 (6th ed. 1984) (App. F at 85a) and *Illustrated Dictionary of Electronics*, pp. 43, 147 (3rd ed. 1985) (App. F at 86a).

1. "Activating"

The danger inherent in this new rule is exhibited by the definition the Federal Circuit selected for the disputed claim term *activating*. The Federal Circuit based its "ordinary meaning" of *activating*, on a definition of a different word,[14] the verb "activate" found

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[13] The Federal Circuit stated that the presumption may be rebutted (App. A at 18a); however, such rebuttal is illusory. The court provides no procedural clue as to how this may be accomplished.

[14] *See Transclean Corp. v. Bridgewood Services, Inc.*, 290 F.3d 1364, 1382 (Fed. Cir. 2002)(technical dictionary definitions "simply inapt" because they defined the wrong word)(Clevenger, dissenting).

in a technical dictionary – namely "[t]o start an operation, usually by application of an appropriate enabling signal." (App. A at 18a (citing the *Modern Dictionary of Electronics*, p. 20 (6th ed. 1984))) Notably, the Court ignored the definition of *activating* that appears in that same dictionary.[15] The Federal Circuit concludes, without citation to the record, that "there is nothing in the record to suggest that *activating* means other than its dictionary definition would suggest," such that the presumption in favor of ordinary meaning is unrebutted. *Id.*

Further illustrating the problems with utilizing a dictionary definition not in the record (and thus not subject to challenge by the parties), the Federal Circuit's analysis selectively ignores the definitional difference

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[15] The *Modern Dictionary of Electronics* defined *activating* as:

> 1. Chemically treating a basic metal to remove oxides and other passive films to make it more receptive to electroplating. 2. A treatment that renders nonconductive material receptive to electroless deposition.

(App. F at 85a) The dictionary also defined *activation* as:

> 1. Making a substance artificially radioactive by placing it in an accelerator such as a cyclotron, or by bombarding it with neutrons. 2. To treat the cathode or target of an electron tube in order to create or increase its emission. 3. The process of adding electrolyte to a cell to make it ready for operation. 4. Causing the acceleration of a chemical reaction.

(App. F at 85a) Obviously, these definitions bear no relation to the claimed invention and demonstrate the absurd results that can emanate from the mechanical application of dictionary definitions. *Multiform Desiccants, Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)("courts must exercise caution" when using dictionaries).

between verb tenses, which are used to reflect shifts in time and meaning.[16] The *–ing* ending in this case clearly alters the meaning of the present tense of the verb. When considered as a gerund or a present participle, the definition of *activating* expands to include the state of 'being on' after completion of the action as the district court found.[17] Application of basic grammar rules to the dictionary definition of 'activate' supports the district court's claim construction.

Moreover, the intrinsic evidence suggests that *activating* was intended to encompass both the initial event of 'turning on' and the state of 'being on.' The intrinsic evidence in this case provides the necessary context for clarification of the meaning of the terms. *See Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed Cir. 2002); *Multiform Desiccants*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)(the "best source for understanding a technical term is the specification from which it arose"). The district court considered both this intrinsic evidence as well as testimony and other evidence during a three-day *Markman* evidentiary claims construction hearing to form its claim construction decision. Not content with its original decision, additional evidence and argument was considered by the district court, resulting in an amended claim construction Order on February 9, 2001 (App. D at 69a). The Federal Circuit's decision effectively replaces

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[16] Presumably in recognition of these shifts in time and meaning, the Court notes the difference between the present tense, "activate," and the past tense form, "activated," and admits that the past tense form denotes the state of "being on." (App. A at 18a)

[17] *See also Transclean Corp.*, 290 F.3d at 1381 (district court properly rejected proffered definition of resilience and adopted instead the ordinary meaning of the actual claim term resilient)(Clevenger dissenting).

this extensive record with a dictionary definition that was not presented by either party to the district court nor the Federal Circuit, without giving the parties an opportunity to address whether the definition was appropriate (i) given the context of the claim terms, (ii) in light of the intrinsic evidence, and (iii) given the time frame of the invention.

2. "Display Areas" and "Background Areas"

The danger inherent in the Federal Circuit's new rule is also reflected by the Federal Circuit's construction of the terms *display areas* and *background areas*. As to these terms, the District Court instructed the jury that:

> *Display areas* and *background areas* 'include any illuminated pixel anywhere on the display device with background pixels illuminated to substantially surround the illuminated display area pixels.' As the image for illuminated display area changes, so does the adjacent illuminated *background area*.

(App. A at 24a) However, in turning to a dictionary not in evidence nor considered below, the Federal Circuit held:

> Beginning with the words of the claims themselves, the dictionary meaning of display is "[a] visually observable presentation of information. . . ." *Illustrated Dictionary of Electronics* 147 (3rd ed. 1985). Background is defined as:

> "[the] context or supporting area of a picture. . . ." *Id.* at 43. Thus, the ordinary meaning of "display area," as reflected in these dictionary definitions, is an area designated to portray information. Background is ordinarily understood to provide the context or contrasting reference against which the displayed information is presented. The ordinary meaning of these limitations does not indicate that the display and background areas are interchangeable.

(App. A at 25a) In relying upon this dictionary definition,[18] the Federal Circuit held:

> On the basis of the ordinary meaning of the words of the claim and the intrinsic evidence, we conclude that these limitations should be construed as follows: display areas include any illuminated pixel anywhere on the display device, other than background area pixels in defined background regions. The background area pixels substantially surround the illuminated display area pixels. Display

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[18] The complete definitions for these terms as they appear in the dictionary used by the Federal Circuit are as follows (*see* App. F at 86a):

- display: "A visually observable presentation of information, such as data entered into a computer, an answer to a problem solved by a computer, the value of a measured quantity, or a plot of a variable."

- background: "1. Context or supporting area of a picture; e.g., the background of a TV picture. 2. Background noise."

> area pixels may be illuminated in the background color, but the background area pixels may not be illuminated in the display color.

(App. A at 27a)

Again, the Federal Circuit ignored the record established by the district court during its three-day claims construction hearing, and opted to replace that record with a definition from an isolated technical dictionary that neither party had proffered, nor the trial court had considered, at any stage of the litigation.[19]

By following its newly enunciated practice that technical dictionaries, encyclopedias and treatises can be relied upon by appellate courts, whether or not they have been introduced in evidence below by the parties or considered by the trial court, the Federal Circuit authored a new claim construction that was propounded by neither TDS nor Telegenix nor adopted by the trial court below.

D. Underlying Questions of Fact? *Cybor v. FAS Technologies* Reveals A Split In The Federal Circuit.

The Federal Circuit's decision to go outside the record appears to be based upon the court's misinterpretation of the role of facts in claim construction analysis. By focusing on prior decisions

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[19] In addition to directly influencing the meaning of the terms "activating," "display areas," and "background areas," the Federal Circuit's use of the dictionary definitions indirectly affected the claim construction of the other terms redefined by the Federal Circuit during its analysis. Accordingly, the use of the dictionary definitions improperly distorted the Federal Circuit's claim construction review.

holding that claim construction is a matter of law, the Federal Circuit now decides, in essence, that it can disregard the rules of appellate procedure to go beyond the record established in the lower court. A review of the Federal Circuit's decision in *Cybor v. FAS Technologies, Inc.*, however, shows that the Federal Circuit has a split among its own members as to the propriety of such a decision.

The Federal Circuit justifies conducting its own investigation and utilizing extra-record materials by failing to recognize this Court's holding in *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S. Ct. 384, 134 L. Ed. 2d 577 (1996) (*Markman II*), affirming *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (*en banc*) (*Markman I*). The Federal Circuit's rationale in departing from the established record is that claim construction is a legal question and thus there is no factual issue before it. This is a misreading of *Markman II*. In *Markman II*, this Court opined that claim construction is a "mongrel" practice (*Markman II*, 517 U.S. at 378) that is between "legal standard and a simple historical fact" (*Markman II*, 517 U.S. at 388).

Subsequently, in *Cybor Corp. v. FAS Techs., Inc.*, a majority of the Federal Circuit interpreted *Markman II* to mean that there is no fact issue involved in the proper interpretation of claims.[20] Using this strained interpretation in the present case, the Federal Circuit has now decided that when it elects to consider a technical dictionary definition (and presumably other technical resources or references) in pursuit of claim construction, such an examination is purely a legal exercise and does not concern facts.

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[20] 138 F.3d 1448, 1455 (Fed. Cir. 1998) (*en banc*).

The Federal Circuit's *Cybor* decision, however, is an example of the conflict and uncertainty in applying this rule. In particular, Chief Judge Mayer and Circuit Judge Newman disagreed with the *en banc* Court's opinion "because it profoundly misapprehends" *Markman II*. *Cybor*, 138 F.3d at 1463 (Mayer, J., concurring). In his concurrence, Chief Judge Mayer detailed how the Federal Circuit had gone astray through its formulation of claim construction issues as a "pure question of law to be decided *de novo* in all cases on appeal." *Cybor*, 138 F.3d at 1464. He noted that the Federal Circuit may not "construe a claim in a manner that is inconsistent with our function as a court of review; we cannot divine new interpretations of terms in a claim or make findings of fact from a record that cannot support them." *Cybor*, 138 F.3d at 1466.

> If claim construction is only a question of law to be reviewed by this court de novo, then the absence of review as a matter of right over our claim constructions, which may be new and unsupported by legal analysis, or may never have been tested by the adversarial process, would transform this court into a trial court of first and usually last resort.

Id.

In the present case, the Federal Circuit's *de novo* review included new evidentiary considerations, thus it became a *sua sponte* appellate trial court of "first and last resort."

Judge Rader, in his dissent, articulated the multifaceted problems that occur when the Federal Circuit reviews claim construction "independently *without deference* to the trial judge" or "as a matter of

law, unencumbered by the trial process." *Cybor*, 138 F.3d at 1473 (Rader, J., dissenting)(emphasis added). In detailing the Federal Circuit's high reversal rate for claim construction, he noted that the Federal Circuit had rejected "not only the trial judge's claim reading, but also the readings advocated by both parties at trial and the readings advocated by all experts in the trial." *Id.* at 1476. That is precisely what the Federal Circuit did here.

Judge Rader further warned the court that trial judges enjoy a superior position to the appeals court in claim interpretation. "If district judges are not satisfied with the proofs proffered by the parties, they are not bound to a prepared record but may compel additional presentations or even employ their own court-appointed expert." *Cybor*, 138 F.3d at 1477. "An appellate court has none of these advantages. *It cannot depart from the record of the trial proceedings.*" *Id.* (emphasis added). Nonetheless, the Federal Circuit has done exactly that – it departed from the record of the trial proceedings.

Circuit Judge Newman concurred with Judge Rader's cautionary note as to the Federal Circuit's role in claim construction:

> The second area of disappointed expectations has flowed from the unexpectedly creative de novo claim interpretations that the Federal Circuit has issued in a few cases. This unpredictability in administration of the law of patent claiming has added a sporting element to our bench.

Cybor, 138 F.3d at 1479 (Newman, J., supplying additional view).

The Federal Circuit's lack of authorization to find facts is summarized by Judge Mayer, who stated:

> The Supreme Court recognized that in some cases there will be conflicting evidence that has to be resolved—where there are factual determinations that are more than just incident to claim construction—such as the understanding of one skilled in the art at the time the patent application was filed. In these cases, all that *Markman* stands for is that the judge will do the resolving, not the jury. Wisely, the Supreme Court stopped short of authorizing us to find facts *de novo* when evidentiary disputes exist as part of the construction of a patent claim and the district court has made these findings without committing clear error.

Cybor, 138 F.3d at 1464 (Mayer, J., concurring).

In the present case, the parties had a three-day evidentiary *Markman* hearing, complete with expert witnesses, cross examination, and all procedural safeguards so as to put the trial court in the best possible position to make an informed judgment as to the interpretation of the claims one of ordinary skill in the art would have had at the time of the Havel patents. This was then followed by a three-week jury trial, and then by appeal to the Federal Circuit, only to have the Federal Circuit remand for a new trial on liability and damages based upon a maverick claim interpretation of key claim elements in which the Federal Circuit did not limit its review to the evidence in the record.

In other words, the Federal Circuit now holds that it can make legal rulings *de novo* by considering

anything it wants, even if the information is not in the record nor the proper subject of judicial notice.

IV. The Federal Circuit's Reliance Upon Extra-Record Materials, Without Providing A Party An Opportunity To Rebut Presumptions Raised By Those Materials, Violates The Due Process Clause Of The United States Constitution.

The Federal Rules of Evidence demand evidence be considered by a court only after (i) it runs the gamut of obstacles such as relevance, privilege and hearsay in pursuit of admittance onto the record, or (ii) the court takes judicial notice of the evidence and thus removes the need to navigate the aforementioned obstacles. 21 Charles Alan Wright & Kenneth A. Graham, Jr., Federal Practice and Procedure § 5102 (1977). This two-pronged course ensures every party the fundamental right to confront evidence that is asserted against it. To violate this fundamental right is to violate the most basic element of a party's Fifth Amendment right to due process.[21]

Since the Federal Circuit did not take judicial notice of the technical dictionaries,[22] consideration of these materials must pass the traditional evidentiary

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[21] *Mathews v. Eldridge*, 424 U.S. 319, 333 (1976).

[22] Indeed, the Federal Circuit could not have taken judicial notice of this contested terminology. As the Federal Circuit itself has found, "Courts may take judicial notice of facts of universal notoriety, which need not be proved, and of whatever is generally known within their jurisdictions." *B.V.D. Licensing Corp. v. Body Action Design, Inc.*, 846 F.2d 727, 728 (Fed. Cir. 1988) (citing *Brown v. Piper*, 91 U.S. 37, 42 (1875)). The definition for the claim terms did not meet this standard and further was clearly contested by the parties.

hurdles before being considered by the court. To say otherwise "would sanction the creation of an unregulated back door through which unrebuttable, extra-record evidence could be introduced against [a party]."[23] To examine evidence not in the record places the Federal Circuit at odds with other courts of appeals for reasons of basic due process. "[D]ue process entitles a person to fact-finding based on a record produced before the decisionmaker and disclosed to that person, and an individualized determination of his interests."[24] This constitutional foundation is fractured when (i) a court examines matters not in the record, or (ii) places matters in the record without subjecting it to confrontation. Certainly, preventing TDS from confronting the evidence is tantamount to throwing the "back door" open and closing the door on TDS's Fifth Amendment rights.

The Federal Circuit denied TDS its fundamental right to confront substantive evidence because the court found the dictionary definitions on its own and then weighted those definitions heavily in the all-important claim construction, without giving any real opportunity for rebuttal. In light of the foregoing argument, TDS suffered extreme prejudice based upon the Federal Circuit's actions in violation of due process.

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[23] *Kaczmarczyk v. INS*, 933 F.2d 588, 596 (7th Cir. 1991).

[24] *de la Llana-Castellon v. I.N.S.*, 16 F.3d 1093, 1096 (10th Cir. 1994)(citations omitted).

V. The Supreme Court Should Use Its Supervisory Powers To Preclude The Federal Circuit From Conducting *Sua Sponte* Fact-Finding Investigations.

Through the exercise of its supervisory powers under Rule 10, this Court has a duty to maintain standards of procedure and evidence for the federal courts to follow in civil cases. *Thiel v. Southern Pac. Co.*, 328 U.S. 217, 225 (1946) (citing *McNabb v. United States*, 318 U.S. 332, 340 (1943)). Such standards are not satisfied merely by observance of the minimal historic safeguards of due process; rather, the Court must formulate rules of procedure and evidence that are guided by basic considerations of justice. *McNabb*, 318 U.S. at 340. Thus, this Court's supervisory powers go beyond just maintaining due process.

Federal Rule of Appellate Procedure 10 defines the treatment of the record on appeal. The purpose of this Rule is to establish a record that reflects the proceedings in the trial court, which then forms the landscape within which the appellate court is to conduct its review. There is no reason to establish this record if the appellate court can ultimately consider other materials not in the record, particularly materials the appellate court finds on its own accord. Nevertheless, this is precisely what the Federal Circuit now believes it can and will do during its appellate review.

Such action by the Federal Circuit is improper. An appellate court's principle role is to review a trial court's decision on the basis of the trial court's record, not to marshal evidence that another party's counsel neglected to offer. *Fassett v. Delta Kappa Epsilon*, 807 F.2d 1150, 1165 (3d Cir. 1986). It is even more so not a role of the appellate court to do its own independent investigation such that it is a fact-finder presenting its

own evidence for review. *In re Capital Cities/ABC, Inc.'s Application for Access to Sealed Transcripts*, 913 F.2d 89, 96 (3d Cir. 1990) ("'[a]s an appellate court we do not take testimony, hear evidence or determine disputed facts in the first instance. Instead, we rely upon a record developed in those fora that do take evidence and find facts.'")(*quoting Sewak v. INS*, 900 F.2d 667, 673 (3d Cir. 1990)). However, in this instance, the Federal Circuit did indeed conduct its own investigation to find certain facts. It utilized (and relied heavily upon) this outside-the-record evidence in rendering its decision. Such improper practices must be stopped through the use of this Court's supervisory powers.

This new practice of the Federal Circuit frustrates basic tenets underlying the judicial system. Trial court decisions will lose their sense of finality because fact-finding will continue on appeal. This practice also establishes a vehicle by which a losing party can go find additional evidence to present for the first time to the appellate court that the other party will have no opportunity to challenge.[25] Moreover, the Federal Circuit's new practice invites trial by ambush. A party could hold back certain evidence at trial, and then, if unsuccessful at trial, present the evidence during appeal.

Consequently, the Court should exercise its supervisory powers and maintain the proper standards of evidence jurisprudence by instructing the Federal Circuit to refrain from considering matters outside the trial record and further to refrain from being a fact-finder.

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[25] Given the nature of the Federal Circuit's new practice, it is not clear whether the Federal Circuit can refuse to consider such evidence if presented to it for the first time on appeal.

CONCLUSION

In conclusion, the Federal Circuit's opinion in the present case defies the holdings of the other United States Courts of Appeals, as well as the very foundations of the Federal Rules of Evidence and the Fifth Amendment's protection of a party's due process right to confront evidence used against it. Consequently, the Federal Circuit's claim construction altering the trial court's claim construction should be vacated and the original trial verdict be reinstated.

For the reasons set forth above, the Petition for Writ of Certiorari should be granted.

Respectfully Submitted,

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(Any footnotes trail end of each document)
02-1032

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

TEXAS DIGITAL SYSTEMS, INC.,
Plaintiff-Appellee,

v.

TELEGENIX, INC., Defendant-Appellant.

October 16, 2002, Decided

COUNSEL:
Richard L. Schwartz, Winstead Sechrest & Minick P.C., of Dallas, Texas, argued for plaintiff-appellee. With him on the brief was Inge A. Larish.

Gregory J. Lavorgna, Drinker, Biddle & Reath LLP, of Philadelphia, Pennsylvania, argued for defendant-appellant. With him on the brief were Joseph R. DelMaster, Jr., Robert E. Cannuscio, and Stephen B. Schott.

JUDGES:
Before MICHEL, SCHALL, and LINN, Circuit Judges.

OPINIONBY:
LINN

OPINION:

Before MICHEL, SCHALL, and LINN, Circuit Judges.

LINN, Circuit Judge.

Telegenix, Inc. ("Telegenix") appeals from the final judgment of the United States District Court for the Northern District of Texas in favor of Texas Digital Systems, Inc. ("TDS"). Because the district court erroneously construed certain disputed claim limitations, but correctly construed other claim limitations, we affirm-in-part, reverse-in-part, and remand.

BACKGROUND

TDS is the current owner of the four patents at issue, U.S. Patent Nos. *4,845,481* (" '*481* patent"), *4,965,561* (" '*561* patent"), *4,734,619* (" '*619* patent"), and *4,804,890* (" '*890* patent"), each issued to Karel Havel. TDS obtained these patents from Havel in 1997.

The Havel patents are directed to methods and devices for controlling the color of pixels in a light emitting diode ("LED") display. Each pixel includes at least two elements corresponding to different primary colors, e.g., one red element and one green element. Light signals from the two elements may be blended to produce a composite light signal of variable color. Figure 1 of the '*481* patent, reproduced below, shows seven pixels arranged in a familiar seven-segment display pattern, each pixel having a red element (i.e., 2a-2g) and a green element (i.e., 3a-3g).

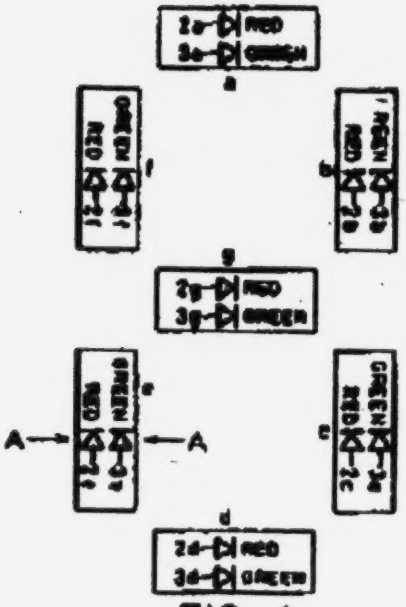

FIG. 1

Claims 1 and 2 of the '*481* patent are representative of the asserted claims of the '*481* and '*561* patents:

1. A method for controlling a color of a variable color display device which comprises a plurality of *display areas arranged in a pattern* for selectively exhibiting a plurality of display units, each said display area including a plurality of light sources for emitting upon activation light signals of respectively different primary colors and means for combining said light signals to obtain a composite light signal of a composite color, by exhibiting a selected display unit by *repeatedly substantially simultaneously activating* the light sources in selected display areas for brief time intervals to cause the light sources to emit light signals of said primary colors, and by *selectively controlling the durations of the time intervals of activation* of the light sources in the selected display areas to control the portions of the primary color light signals emitted

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therefrom, to thereby control the color of the exhibited display unit. (emphases added)

2. A variable color display device comprising:

a plurality of variable color *display areas arranged in a pattern* for selectively exhibiting a plurality of display units, each said display area including a plurality of light sources or emitting upon activation light signals of respectively different primary colors and means for combining said light signals to obtain a composite light signal of a composite color;

means for exhibiting a selected display unit by *repeatedly substantially simultaneously activating* the light sources in selected display areas by pulses of a substantially constant amplitude for causing the light sources to emit light signals of said primary colors; and

color control means for selectively controlling the durations of the pulses applied to the light sources in the selected display areas to control the portions of the primary color light signals emitted therefrom, to thereby control the color of the exhibited display unit. (emphases added)

The *'619* patent is directed to display devices including a variable color background area 32 substantially surrounding the display area segments 31, as illustrated in Fig. 1a, reproduced below.

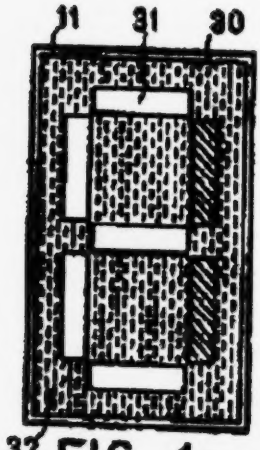

FIG. 1a

Claim 1 of the '*619* patent is representative of the claims and is reproduced below:

1. A variable color display device comprising:

a plurality of variable *color display areas arranged in a pattern*, each said display area including a plurality of display light sources for emitting upon activation light signals of different colors and means for combining said light signals to obtain a composite light signal of a composite color;

a variable color background area substantially surrounding said display areas and including a plurality of background regions adjacent to said display areas, each said background region including a plurality of light sources for emitting upon activation light signals of different colors and means for combining said light signals to obtain a composite light signal of a composite color;

a plurality of opaque walls for optically separating said background regions from adjacent display areas; and

. *means for selectively activating said display light sources*, to illuminate certain of said display areas in a first color, and said background light sources, to illuminate said background regions in a second color different from said first color. (emphases added)

The '*890* patent is directed to a variable color LED display and display circuit as illustrated in Figure 3, reproduced below:

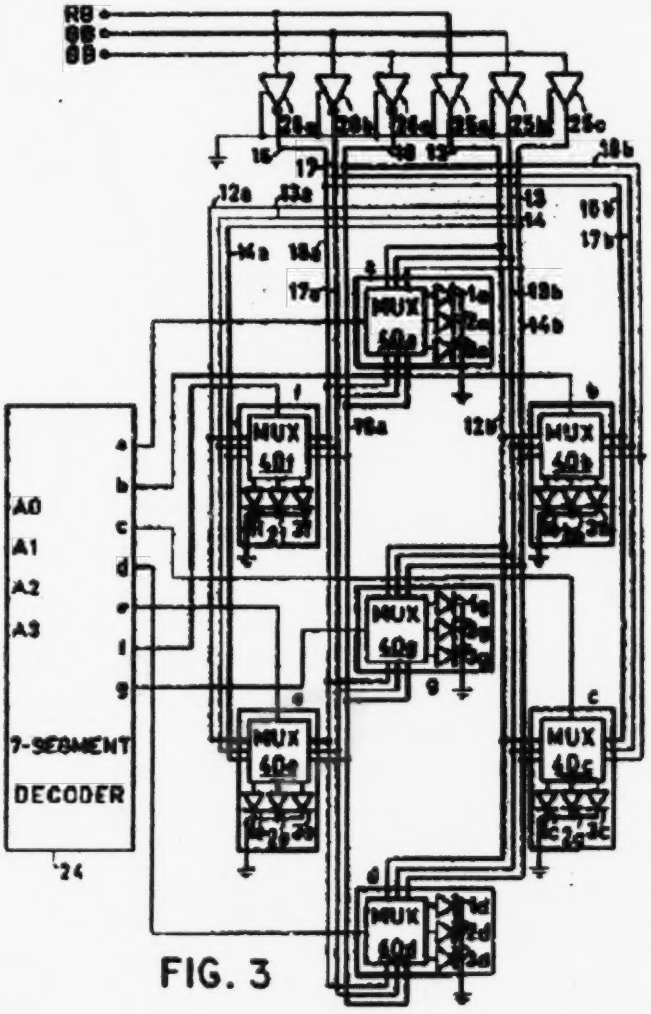

FIG. 3

Representative claim 4 of the '*890* patent is reproduced below:

4. A display device comprising:

a plurality of variable color *display areas arranged in a pattern* for selectively exhibiting a plurality of display units, each said display area including a plurality of light sources for emitting upon activation light signals of different colors and means for combining said light signals to obtain a composite light signal of a composite color;

first means for carrying selective display color control signals;

converter means for converting said display color control signals to obtain complementary color control signals;

second means for carrying said complementary color control signals; and

control means for selectively coupling said light sources in said display areas to said first means, for causing selective ones of said display areas to illuminate in a selected color defined by said display color control signals, and to said second means, for causing the remaining display areas to illuminate in a substantially complementary color defined by said complementary color control signals. (emphases added)

After TDS obtained the Havel patents in 1997, TDS filed suit, alleging that Telegenix's Colorgraphix devices infringed each of them. Following a jury verdict in favor of TDS, the district court entered judgment that Telegenix had literally infringed claims 1-4 and 7 of the

'*481* patent, claims 1-4 of the '*561* patent, claim 1 of the '*619* patent, and claim 4 of the '*890* patent. The district court also found each of the asserted claims not invalid and concluded that Telegenix had willfully infringed "one or more" of the four asserted patents.

The district court awarded TDS a reasonable royalty of 20% as applied to $ 30 million in infringing sales (i.e., $ 6 million), enhanced damages of $ 6 million, pre-judgment interest of $ 3,007,999, post-judgment interest at 6.5%, and costs. The district court also permanently enjoined Telegenix from making, using, selling, or offering to sell its Colorgraphix color display devices, versions of its software used with the Colorgraphix color display devices, or other devices that otherwise infringe.

Telegenix appeals. We have jurisdiction pursuant to *28 U.S.C. § 1295*(a)(1).

ANALYSIS

Standard of Review

Claim construction is a question of law that this court reviews de novo. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998) (*en banc*). The standard of review for jury instructions is prejudicial legal error. See *Jamesbury Corp. v. Litton Indus. Prods.*, 756 F.2d 1556, 1558, 225 USPQ 253, 255 (Fed. Cir. 1985), *overruled on other grounds* by *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 22 USPQ2d 1321 (Fed. Cir. 1992) (*en banc*). To prevail, the party challenging the jury instruction "must demonstrate both that the jury instructions actually given were fatally flawed and that the requested instruction was proper and could have corrected the flaw." *Biodex Corp. v. Loredan Biomedical, Inc.*, 946 F.2d 850, 862, 20 USPQ2d 1252, 1261 (Fed. Cir. 1991). "An erroneous instruction

regarding claim interpretation that affects the jury's decision on infringement is grounds for a new trial." *Ecolab Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1373, 62 USPQ2d 1349, 1356 (Fed. Cir. 2002).

Telegenix, which timely objected to the jury instructions at trial, argues that the district court erroneously interpreted the claims of the asserted patents in its *Markman* order and instructed the jury according to the erroneous claim constructions. Telegenix further argues that the district court abused its discretion in excluding certain evidence offered by Telegenix and in admitting other evidence presented by Texas Digital, and erroneously relied on the rule of *Wine Railway Appliance Co. v. Enterprise Railway Equipment Co.*, 297 U.S. 387, 80 L. Ed. 736, 56 S. Ct. 528, 1936 Dec. Comm'r Pat. 657 (1936). On these grounds, Telegenix seeks a new trial. We address each of the allegations of error in turn.

I. The Contours of Claim Construction

"In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.' 35 U.S.C. § 112, P 2." *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331, 59 USPQ2d 1401, 1406 (Fed. Cir. 2001). The terms used in the claims bear a "heavy presumption" that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art. See *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed. Cir. 2002); *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1362-63, 52 USPQ2d 1001, 1004 (Fed. Cir. 1999); *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 989, 50 USPQ2d 1607, 1610 (Fed. Cir. 1999); *Specialty*

Composites v. Cabot Corp., 845 F.2d 981, 986, 6 USPQ2d 1601, 1604 (Fed. Cir. 1988). Moreover, unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art. See *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001); *Johnson Worldwide Assocs.*, 175 F.3d at 989, 50 USPQ2d at 1610; *Specialty Composites*, 845 F.2d at 986, 6 USPQ2d at 1604.

It has been long recognized in our precedent and in the precedent of our predecessor court, the Court of Customs and Patent Appeals, that dictionaries, encyclopedias and treatises are particularly useful resources to assist the court in determining the ordinary and customary meanings of claim terms. See *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325, 63 USPQ2d 1374, 1380 (Fed. Cir. 2002) ("The ordinary meaning of a claim term may be determined by reviewing a variety of sources, including . . . dictionaries and treatises . . . ." (internal citations omitted)); *CCS Fitness*, 288 F.3d at 1366, 62 USPQ2d at 1662 ("Our precedents show that dictionary definitions may establish a claim term's ordinary meaning."); *Optical Disc Corp. v. Del Mar Avionics*, 208 F.3d 1324, 1334-35, 54 USPQ2d 1289, 1295 (Fed. Cir. 2000) ("For such ordinary meaning, we turn to the dictionary definition of the term."); *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1581, 36 USPQ2d 1162, 1166 (Fed. Cir. 1995) ("We see no error in the district court's use of dictionary definitions to ascertain the ordinary meaning of the relevant claim limitation."); *In re Ripper*, 36 C.C.P.A. 743, 171 F.2d 297, 299, 80 USPQ 96, 98 (C.C.P.A. 1948) ("It is clear that in ascertaining the meaning of [the claim term] as it appears herein, reference properly may be made to the ordinary dictionaries.").

Dictionaries are always available to the court to aid in the task of determining meanings that would have been attributed by those of skill in the relevant art to any disputed terms used by the inventor in the claims. See *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 n.6, 39 USPQ2d 1573, 1578 n.6 (Fed. Cir. 1996) ("[T]echnical treatises and dictionaries . . . are worthy of special note. Judges are free to consult such resources at any time . . . and may also rely on dictionary definitions when construing claim terms . . . ."); *Cybor Corp.*, 138 F.3d at 1459, 46 USPQ2d at 1177 (citing Vitronics for the proposition that a court is free to consult dictionaries, encyclopedias, and treatises at any time to help determine the meaning of claim terms); *Vanguard Prods. Corp. v. Parker Hannifin Corp.*, 234 F.3d 1370, 1372, 57 USPQ2d 1087, 1089 (Fed. Cir. 2000) ("A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction.").

When a patent is granted, prosecution is concluded, the intrinsic record is fixed, and the public is placed on notice of its allowed claims. Dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art. Such references are unbiased reflections of common understanding not influenced by expert testimony or events subsequent to the fixing of the intrinsic record by the grant of the patent, not colored by the motives of the parties, and not inspired by litigation. Indeed, these materials may be the most meaningful sources of information to aid judges in better understanding both the technology and the terminology used by those skilled in the art to describe the technology.

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These materials serve as important resources to assist courts in many ways. For example, they are often used to aid in the interpretation of statutes and regulations and in the interpretation of terms used in contracts. See, e.g., *Rocknel Fastener, Inc. v. United States*, 267 F.3d 1354, 1356-57 (Fed. Cir. 2001) (advising that the interpretation of tariff terms, a matter of statutory construction, may be aided by reviewing "dictionaries, scientific authorities, and other reliable information sources" (citations omitted)); *Am. Express Co. v. United States*, 262 F.3d 1376, 1381 n.5 (Fed. Cir. 2001) (in interpreting Internal Revenue Service regulations and procedures, "[i]t is appropriate to consult dictionaries to discern the ordinary meaning of a term not explicitly defined by statute or regulation"); *Bowers v. Baystate Techs.*, 302 F.3d 1334, 1345-46 (Fed. Cir. 2002) (construing contract terms using non-technical and technical dictionaries); *Buchanan v. Dep't of Energy*, 247 F.3d 1333, 1339 (Fed. Cir. 2001) (relying on a dictionary definition in construing a settlement agreement). These materials deserve no less fealty in the context of claim construction.

As resources and references to inform and aid courts and judges in the understanding of technology and terminology, it is entirely proper for both trial and appellate judges to consult these materials at any stage of a litigation, regardless of whether they have been offered by a party in evidence or not. Thus, categorizing them as "extrinsic evidence" or even a "special form of extrinsic evidence" is misplaced and does not inform the analysis.

Because words often have multiple dictionary definitions, some having no relation to the claimed invention, the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent

with the use of the words by the inventor. See *Dow Chem. Co. v. Sumitomo Chem. Co.*, 257 F.3d 1364, 1372-73, 59 USPQ2d 1609, 1614 (Fed. Cir. 2001); *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478, 45 USPQ2d 1429, 1433 (Fed. Cir. 1998). If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings. *Rexnord*, 274 F.3d at 1343, 60 USPQ2d at 1858 (holding that the claim term "portion" may be interpreted in accordance with the dictionary definitions to encompass both "separate" and "integral" parts of an object). The objective and contemporaneous record provided by the intrinsic evidence is the most reliable guide to help the court determine which of the possible meanings of the terms in question was intended by the inventor to particularly point out and distinctly claim the invention. See *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250, 48 USPQ2d 1117, 1122 (Fed. Cir. 1998) ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.").

Moreover, the intrinsic record also must be examined in every case to determine whether the presumption of ordinary and customary meaning is rebutted. *See id.* Indeed, the intrinsic record may show that the specification uses the words in a manner clearly inconsistent with the ordinary meaning reflected, for example, in a dictionary definition. In such a case, the inconsistent dictionary definition must be rejected. *See id.* ("[A] common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty."); *Liebscher v. Boothroyd*, 46 C.C.P.A. 701, 258 F.2d 948, 951, 119 USPQ 133, 135 (C.C.P.A. 1958) ("Indiscriminate reliance on definitions found in dictionaries can often produce

absurd results."). In short, the presumption in favor of a dictionary definition will be overcome where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning. See *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994); *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1387-88, 21 USPQ2d 1383, 1386 (Fed. Cir. 1992). Further, the presumption also will be rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope. See *Teleflex*, 299 F.3d at 1324, 63 USPQ2d at 1380.

Consulting the written description and prosecution history as a threshold step in the claim construction process, before any effort is made to discern the ordinary and customary meanings attributed to the words themselves, invites a violation of our precedent counseling against importing limitations into the claims. See, e.g., *Generation II Orthotics Inc. v. Medical Technology Inc.*, 2001 U.S. App. LEXIS 18420, 263 F.3d 1356, 1367, 59 USPQ2d 1919, 1928 (Fed. Cir. 2001) ("The district court should have construed the claim limitation 'controlled' according to its ordinary and accustomed meaning [citing medical dictionary], rather than importing a characteristic of a disclosed or preferred embodiment into that term."); *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 867, 228 USPQ 90, 93 (Fed. Cir. 1985) ("Generally, particular limitations or embodiments appearing in the specification will not be read into the claims."), overruled on other grounds by *Nobelpharma AB v. Implani Innovations, Inc.*, 141 F.3d 1059, 46 USPQ2d 1097 (Fed. Cir. 1998). For example, if an invention is disclosed in the written description in only one exemplary form or in only one embodiment, the risk of starting with the intrinsic record is that the single

form or embodiment so disclosed will be read to require that the claim terms be limited to that single form or embodiment. See *Teleflex, 299 F.3d at 1328*, 63 USPQ2d at 1383 ("To the extent that the district court construed the term 'clip' to be limited to the embodiment described in the specification, rather than relying on the language of the claims, we conclude that the district court construed the claim term 'clip (28)' too narrowly."); *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998) (cautioning against the limitation of the claimed invention to preferred or specific embodiments or examples); *Transmatic, Inc. v. Gulton Indus., Inc.*, 53 F.3d 1270, 1277, 35 USPQ2d 1035, 1040-41 (Fed. Cir. 1995) ("[A] patent claim is not necessarily limited to a preferred embodiment disclosed in the patent."); *SRI Int'l, Inc. v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 n.14, 227 USPQ 577, 585 n.14 (Fed. Cir. 1985) (*en banc*) ("That a specification describes only one embodiment does not require that each claim be limited to that one embodiment."). Indeed, one can easily be misled to believe that this is precisely what our precedent requires when it informs that disputed claim terms should be construed in light of the intrinsic record. *See, e.g., Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980, 34 USPQ2d 1321, 1329-30 (Fed. Cir. 1995) (stating the claims must be construed in light of the specification and the patent's prosecution history, if in evidence). But if the meaning of the words themselves would not have been understood to persons of skill in the art to be limited only to the examples or embodiments described in the specification, reading the words in such a confined way would mandate the wrong result and would violate our proscription of not reading limitations from the specification into the claims. See, e.g., *Teleflex, 299* F.3d at 1328, 63 USPQ2d at 1383; *Generation II Orthotics*, 263 F.3d at 1367, 59 USPQ2d at 1928; Comark,

156 F.3d at 1186, 48 USPQ2d at 1005; *Transmatic*, 53 F.3d at 1277, 35 USPQ2d at 1040-41; *SRI Int'l*, 775 F.2d at 1121 n.14, 227 USPQ at 585 n.14.

By examining relevant dictionaries, encyclopedias and treatises to ascertain possible meanings that would have been attributed to the words of the claims by those skilled in the art, and by further utilizing the intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor, the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations from the written description into the claims will be more easily avoided.

A. "repeatedly substantially simultaneously activating"

Each of the asserted claims of TDS's *'481* and *'561* patents includes the limitation, "repeatedly substantially simultaneously activating."[1] The district court construed this limitation as follows:

> The term **repeatedly** means "repeating" in its ordinary sense, and that the repetitions be fast enough such that the composite color is actually perceived by the viewer. The **term substantially, simultaneously activating** means that during some portion of this period (defined as **repeatedly**), the two separate lights are on at the same time.

Tex. Digital Sys. Inc. v. Telegenix, Inc., 2000 U.S. Dist. LEXIS 18360, *16, No. 3:98-CV-1537-R (N.D. Tex. Dec. 6, 2000).

Telegenix argues that the district court erred by requiring merely that the lights *be on* simultaneously, instead of requiring that the activation of each light begin at substantially the same time. According to Telegenix, the district court improperly separated the adverbs "substantially simultaneously" from the verb it modifies, "activating," and thereby failed to require that the light emitting diodes ("LEDs") must be activated, or turned on, at the same time.

According to TDS, the crucial word in the phrase is "repeatedly," which would signal to one of skill in the art that the invention activates light sources repeatedly within the "refreshing period" or "repetition period" within which humans do not detect pulses due to the principle of "persistence of vision." TDS argues that because one of skill in the art would understand that the claim refers to simultaneously activating light sources of different colors at some time during that critical repetition/refreshing period, and because humans cannot detect changes, pulses, or activations that occur within that period, the question of whether one begins activation of the LEDs at the exact same time or whether one simply ensures that both of the LEDs are on at some time during the repetition period is irrelevant. Thus, according to TDS, one of skill in the art would not interpret the claim term "repeatedly substantially simultaneously activating the light sources" to limit the starting point of the LED activations.

The district court correctly construed the term "repeatedly." However, the district court's construction of the overall phrase "repeatedly substantially simultaneously activating" was in error and ignored the meaning of the term "activating." We begin by ascertaining the ordinary meaning to one skilled in the art. *See Specialty Composites*, 845 F.2d at 986, 6

USPQ2d at 1604. According to a relevant technical dictionary, to activate is "to start an operation, usually by application of an appropriate enabling signal." *Modern Dictionary of Electronics* 20 (6th ed. 1984). We presume that the word used in a claim carries this ordinary meaning, but this presumption may be rebutted. See *CCS Fitness*, 288 F.3d at 1366, 62 USPQ2d at 1662. Here, the intrinsic evidence is entirely consistent with the dictionary definition, and there is nothing in the record to suggest that "activating" means other than what its dictionary definition would suggest, i.e., starting the operation or turning on. We conclude that the presumption has not been rebutted, and thus the ordinary meaning controls.

TDS has argued that "activating" can mean "being on." Certainly, once activated, a lamp might accurately be described as "being on." But the claim does not refer to the state of the lamps as being "substantially simultaneously activated." The words used, which serve as the focus of the claim construction analysis, call for "substantially simultaneously activating" the lamps, and the ordinary meaning of that phrase requires that during some portion of the period defined as "repeatedly," the two separate lights are turned on at the same or nearly the same time.

B. "selectively controlling the durations of the time intervals of activation"

Claims 1 and 3 of both the *'481* and *'561* patents include the limitation "selectively controlling the durations of time intervals of activation." In its Markman ruling, the district court explicitly refused to provide a distinct definition for this limitation, deeming the phrase "sufficiently defined."

Telegenix contended before the district court, and reiterates on appeal, that this limitation means

"specifically controlling the length of time that individual pulses are activated to vary the amount of light emitted from a light source." Telegenix argues that by his disclosure in the specification, the inventor limited the claims to varying color using pulse width modulation ("PWM"), a technique that varies the duration of individual pulses. Telegenix further contends that the inventor limited the asserted claims to PWM by statements and amendments during prosecution of the patents in suit.

TDS responds that the claims are not limited to the particular PWM technique suggested by Telegenix. TDS urges that the claim language uses the plural form of both "durations" and "time intervals" and thus is consistent with an interpretation in which color is controlled with "more than one pulse and includes multiple activations of the same LED within the repetition period." In other words, TDS urges a claim construction that would cover devices which change perceived light intensity by varying either the width of the pulses or the number of pulses.

The words of the claim require "controlling the durations" of the "time intervals of activation." The plain meaning of "controlling the durations" indicates that the claimed invention requires variation of the duration of individual time intervals, or controlling the width of pulses, during which the LEDs are activated, e.g., PWM. This plain meaning is consistent with the specification of the *'481* and *'561* patents. The structures shown in Figures 9 and 11 of the *'481* patent and Figure 1 of the *'561* patent depict circuitry for driving the LEDs using PWM. As shown in Figure 9 of the *'481* patent, the circuitry includes at least one counter 71f for each color connected to a corresponding memory 76 containing data regarding the amount of primary color activation required to produce the desired color. *'481* patent, col.

4, ll. 24-59. The counter and corresponding memory are connected to a "flip-flop" 73 which provides the appropriate output to generate the desired color. *Id.* According to the specification, the "output of the flip flop 73 will be at a high logic level for a period of time proportional to the data" loaded into the counter 71f from the memory 76. *Id.* at col. 4, ll. 51-52. Thus, the circuitry controls color by setting the output "at a high logic level for a period of time proportional" to the desired color data.

Moreover, the prosecution history is consistent with this interpretation of the claim language. During prosecution of the *'481* patent, the inventor distinguished prior art on the basis of PWM. The Patent Office initially rejected all claims in the application as obvious in view of the Kaelin reference, which taught that "LED color display elements can be varied by applying variable timed pulses to the individual diodes." The applicant responded by submitting new claims and arguing that the invention "control[s] the durations of the pulses that are applied to the primary color light sources in the selected display areas to control the portions of the primary color light signals, to thereby control the color of the exhibited display unit."

On the basis of our review of the ordinary meaning of the words themselves, we conclude that this limitation requires control of pulse width. This is entirely consistent with the intrinsic record. Contrary to TDS's argument, introducing multiple pulses of identical duration during the repetition period does not effect control of pulse duration. Where multiple pulses of identical duration are introduced during a single repetition period, pulse duration remains constant and color is controlled not by varying "the durations of the time intervals of activation" of pulses, as called for in the claims themselves, but by varying the number of

constant duration pulses applied. Such a technique does not set the output "at a high logic level for a period of time proportional" to the desired color data nor does it "control the durations of the pulses," and thus is inconsistent with the specification and prosecution history.

We conclude that "selectively controlling the durations of the time intervals of activation" means controlling the width of pulses during repetition periods.

C. "color control means"

The "color control means" limitation appears in claims 2, 4, and 7 of the '*481* patent, and claims 2 and 4 of the '*561* patent. The limitation appearing in claim 2 of the '*481* patent is representative:

color control means for selectively controlling the durations of the pulses applied to the light sources in the selected display areas to control the portions of the primary color light signals emitted therefrom, to thereby control the color of the exhibited display unit.

'*481* patent, col. 9, ll. 59-64. The district court construed this limitation to be a means-plus-function limitation–a conclusion with which we agree. Neither party disputes that this limitation is subject to 35 U.S.C. §112, paragraph six. That paragraph states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, para. 6 (2000).

"Because this limitation is expressed in 'means plus function' language and because it does not recite definite structure in support of its function, it is subject to the requirements of 35 U.S.C. § 112, P 6 (1994)." *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424, 43 USPQ2d 1896, 1899 (Fed. Cir. 1997). The first step in construing such a limitation is to identify the function of the means-plus-function limitation. *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258, 52 USPQ2d 1258, 1263 (Fed. Cir. 1999). The next step is to identify the corresponding structure in the written description necessary to perform that function. Id. "Structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *B. Braun*, 124 F.3d at 1424, 43 USPQ2d at 1900.

The district court instructed the jury concerning the claimed function:

> The color control means performs the function of selectively controlling the on times of the light sources to control the portions of primary color light signals for controlling the color of the composite light signal.

The district court described the corresponding structure from the specification as "the structure that performs as disclosed in the specification of the display decoder and decoder driver."

Telegenix argues that the district court erred by misidentifying both the claimed function and the corresponding structure from the specification. We agree. The function recited in the asserted claims does

not include "selectively controlling the on times of the light sources." Instead, the claim recites "selectively controlling the durations of the pulses applied to the light sources . . . ." To the extent that the district court failed to follow the claim language in defining the function, it erred. See *Micro Chem.*, 194 F.3d at 1258, 52 USPQ2d at 1263 ("The statute does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim.").

The district court further erred in its identification of "the display decoder and decoder driver" as the corresponding structure in the specification.

Section 112, ¶ 6, as is well-documented, was intended to permit use of means expressions without recitation of all the possible means that might be used in a claimed apparatus. . . . The price that must be paid for use of that convenience is limitation of the claim to the means specified in the written description and equivalents thereof.

O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583, 42 USPQ2d 1777, 1782 (Fed. Cir. 1997) (citations omitted). The duty to link or associate structure in the specification to the recited function is the quid pro quo for the convenience of employing § 112, paragraph 6. *B. Braun*, 124 F.3d at 1424, 43 USPQ2d at 1899. In the specification, the structure linked to the recited function of "selectively controlling the durations of the pulses applied to the light sources" includes the memory and counter circuitry illustrated in Figure 9. See *'481* patent, col. 4, ll. 24-59. It was error for the district court to omit this structure from its claim construction of the color control means.

Accordingly, we conclude that the "color control means" performs the function of selectively controlling the durations of the pulses applied to the light sources to control the portions of the primary color light signals, to thereby control the color of the exhibited display unit. Moreover, we hold that the corresponding structure includes the memory 76, the counters 71e and 71f, the flip-flop 73, and associated connection circuitry illustrated in Figures 5 and 9. The color control means is limited to this corresponding structure and equivalents thereof.

D. "display areas" and "background area"

The patents in suit recite "display areas" and "background area" at several locations in the asserted claims. For example, claim 1 of the '*619* patent recites "a plurality of variable color display areas . . .; [and] a variable color background area . . . ." The district court instructed the jury:

> *Display areas* and the *background areas* "include any illuminated pixel anywhere on the display device with background pixels illuminated to substantially surround the illuminated display area pixels." As the image for illuminated display area changes, so does the adjacent illuminated *background area*."

Telegenix argues that the jury should have been instructed that the display areas are distinct from the background areas, that display areas cannot become background areas, and that background areas cannot become display areas. TDS argues that the claims encompass display areas arranged in the form of an

array or matrix of areas, and as such the display areas and background areas are interchangeable.

Beginning with the words of the claims themselves, the dictionary meaning of display is "[a] visually observable presentation of information . . . ." *Illustrated Dictionary of Electronics* 147 (3rd ed. 1985). Background is defined as: "[the] context or supporting area of a picture . . . ." *Id.* at 43. Thus, the ordinary meaning of "display area," as reflected in these dictionary definitions, is an area designated to portray information. Background is ordinarily understood to provide the context or contrasting reference against which the displayed information is presented. The ordinary meaning of these limitations does not indicate that the display and background areas are interchangeable.

The specification of the *'619* patent is consistent with an interpretation in which the display and background areas are distinct and not interchangeable. For example, the written description describes the invention as including "a variable color display area" and "a variable color background area 32, substantially surrounding the display area." *'619* patent, col. 2, ll. 16-21. The specifications of the patents in suit do not establish that display areas can *become* background areas, nor do they allow for their interchangeable use.

The specification of the *'890* patent describes illuminating selected display areas in the background color to "blend with the background to provide maximum color contrast." *'890* patent, col. 2, ll. 41-54. However, this establishes only that the inventor contemplated that display areas could *function* similar to the background areas, not that the display and background areas could be interchangeable.

Looking to the prosecution history, there is additional evidence supporting a construction that the display and background areas are mutually exclusive. The inventor stated in response to a rejection: "[claims 1 and 2], similar to claim 13 which was not explicitly rejected, are distinguished from the prior art by the recitation of background regions separated from the display areas by opaque walls. No reference of the record describes explicitly defined background regions." This evidence of manifest exclusion or restriction represents a clear disavowal of claim scope. *See Teleflex, 299 F.3d at 1325, 63 USPQ2d at 1381.* In doing so, the patentee expressly limited background areas to explicitly defined regions. In addition, the patent examiner stated in his notice of allowance, "[t]he prior art does not show the combination of variable color display areas and a variable color background area; these being two discrete, distinct components of the device. It is this distinction which, as claimed, is deemed allowable over the prior art."

The ordinary meaning of the words of the claims, coupled with the patentee's statements in the specification and during prosecution, establish that the district court's instruction was in error. Although the specification indicates that a display area can be illuminated in the background color to "blend with the background to provide maximum color contrast," there is no corresponding indication that the background areas can be illuminated in the display color. The district court's construction that background areas can include "any illuminated pixel anywhere on the display device" is incompatible with the patentee's statements during prosecution expressly limiting the background areas to "explicitly defined background regions."

Moreover, if the background and display areas could each include "any illuminated pixel," the background

area would not be different in nature or quality from the display area. Such a proposition is inconsistent with the language of the claims, in which the inventor claimed a device having two types of areas, and with the specification which describes distinct display areas and background areas.

On the basis of the ordinary meaning of the words of the claim and the intrinsic evidence, we conclude that these limitations should be construed as follows: display areas include any illuminated pixel anywhere on the display device, other than background area pixels in defined background regions. The background area pixels substantially surround the illuminated display area pixels. Display area pixels may be illuminated in the background color, but background area pixels may not be illuminated in the display color.

E. "display areas arranged in a pattern"

The limitation "display areas arranged in a pattern" appears in the asserted claims of the *'481* and *'619* patents, as well as claim 4 of the *'890* patent. The district court construed "pattern" to mean "having a systematic arrangement." Telegenix argues that this construction is too general, and the limitation should be limited to a seven-segment display pattern, for example, that shown in Figures 1a-c of the *'890* patent. TDS responds that this limitation is not limited to a seven-segment display or any other fixed pattern, and that the scope of the claims is broad enough to encompass a matrix display.

Where "pattern" is described in the specifications of the patents in suit, the seven-segment display is listed as an example of the preferred font. The *'481* patent specification describes "seven elongated display segments a, b, c, d, e, f, g, arranged in a conventional pattern." *'481* patent, col. 2, ll. 24-25. The preferred

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embodiment of the '*890* patent is described as including "a variable color display area consisting of seven segments 31 arranged in a well known 7-segment font." '*890* patent, col. 2, ll. 16-18. Nowhere in the specification is the limitation "display areas arranged in a pattern" restricted, explicitly or implicitly, to the seven-segment arrangement of the preferred embodiment.

Telegenix does not dispute that the patents in suit describe the seven-segment pattern in exemplary language. Instead, Telegenix argues that U.S. Patent No. *4,086,514* (" '*514* patent") establishes that the same inventor represented matrix displays and seven-segment displays as two separate embodiments of the same invention. We fail to understand the relevance of Telegenix's argument. Whether or not the claims in an unrelated patent are broad enough to encompass both a matrix and the familiar seven-segment pattern, this proposition sheds no light on whether the claims of the patents in suit are limited to the seven-segment pattern. See *Abbott Labs. v. Dey, L.P.*, 287 F.3d 1097, 1104, 62 USPQ2d 1545, 1550 (Fed. Cir. 2002) (finding the relationship between two unrelated patents, although having common subject matter, a common inventor, and the same assignee, "insufficient to render particular arguments made during prosecution of [one of the patents] equally applicable to the claims of [the other patent]").

Referring to the prosecution history, the Examiner's Statement of Reasons for Allowance for the '*619* patent stated, "In this manner, multicolored arrays (i.e., color cathode ray tube displays such as Takeda, of record) in which there is no physical distinction between a foreground or background pixel (display area), are distinguished from by the claimed subject matter." Although the prosecution history may help define the scope of a term if relevant, see *Southwall Techs., Inc.*

v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995), this Examiner's statement has no bearing on the meaning of the term "pattern." Nor does this statement limit the scope of "pattern" to the familiar seven-segment font.

Accordingly, because there is nothing in the claims or the intrinsic evidence of record to indicate otherwise, we conclude that this limitation was correctly construed by the district court according to the ordinary meaning of "pattern." The district court's construction, "having a systematic arrangement," is not in error.

F. "means for selectively activating said display light sources"

The limitation "means for selectively activating said display light sources" appears in claim 1 of the *'619* patent. The district court instructed the jury:

> The function of this means-plus function element is to control the activation of light sources to illuminate the display area in a first color and the background area in a second color, different from the display area's first color. The function is to activate the display area by passing current through selected light sources of the display area and the background area. The structural components are specified in Figures 3 and 4.

Telegenix argues that the court's construction is too broad, and misled the jury to believe that this limitation can be met by any structure broadly suggested by Figure 3, which shows only a block diagram. Telegenix requested an instruction limiting the structure to the

circuitry shown in Figure 4. Telegenix also argues that "passing current through selected light sources" incorrectly identifies the function.

TDS argues that its expert testified that "means for selectively activating" includes hardware, software, and/or firmware for passing current through selected light sources, as supported by Figures 3 and 4. TDS argues that a block diagram such as that shown in Figure 3 may describe structure.

TDS argues in favor of a broad interpretation of this claim limitation in reliance on the testimony of its expert. "Extrinsic evidence in general, and expert testimony in particular, may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language." *Vitronics*, 90 F.3d at 1584, 39 USPQ2d at 1578. Where the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight. Id. "'Any other rule would be unfair to competitors who must be able to rely on the patent documents themselves, without consideration of expert opinion that then does not even exist, in ascertaining the scope of a patentee's right to exclude.'" Id. (quoting *Southwall Techs.*, 54 F.3d at 1578, 34 USPQ2d at 1678-79). Thus, where the patent documents are unambiguous, reliance upon the testimony of TDS's expert witness would be improper.

We hold, and the parties do not dispute, that this limitation is in means-plus-function form and thus is subject to 35 U.S.C. § 112, paragraph six. As stated above, in construing such a limitation, the task of the district court is first to identify the function recited for the limitation and next to identify the corresponding structure in the written description necessary to perform that function. *See Micro Chem.*, 194 F.3d at 1258, 52 USPQ2d at 1263.

The district court misidentified the recited function by including in the construction, "The function is to activate the display area by passing current through selected light sources of the display area and the background area." This reference to "passing current" has no basis in the claim language. *See Generation II Orthotics*, 263 F.3d at 1364-65, 59 USPQ2d at 1926 ("When construing the functional statement in a means-plus-function limitation, we must take great care not to impermissibly limit the function by adopting a function different from that explicitly recited in the claim."); *Micro Chem.*, 194 F.3d at 1258, 52 USPQ2d at 1263 ("The statute does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim.").

Likewise, the district court's identification of the corresponding structure was incomplete. The description in the specification of the structure corresponding to the recited function is not limited to Figures 3 and 4, as instructed, but also includes the written description accompanying these Figures. See *'619* patent, col. 3, ll. 34-68, and col. 4, ll. 1-61. Moreover, as Figure 3 and its accompanying text serve merely as overview for introducing and explaining Figure 4, the corresponding structures must necessarily be found in Figure 4.

We conclude that the "means for selectively activating" performs the function of "illuminating certain of said display areas in a first color, and said background light sources, to illuminate said background regions in a second color different from said first color." The corresponding structure in the specification is described in Figure 4 and the accompanying written description, including the overview provided by Figure 3 and the written description accompanying that Figure.

The "means for selectively activating" is limited to this corresponding structure and equivalents thereof.

G. "converter means"

The phrase "converter means" is a limitation recited in claim 4 of the *'890* patent. The district court interpreted this phrase to mean:

> The converter means includes firmware, software and/or hardware that functions to convert said display color control signals to obtain complementary color control signals.

Telegenix argues that this interpretation is unsupported, because no software or firmware is mentioned anywhere in the specification. Telegenix argues that the structure disclosed for the "converter means" is the multiplexer and inverter arrangement described in the written description and figures.

TDS argues that its expert testified that one of ordinary skill in the art would have appreciated that the converter means could be implemented in hardware, software, and/or firmware. TDS argues that the function of the converter means includes providing a complementary color in response to the selected display area color, and the multiplexer does not perform this function. Instead, according to TDS, only the inverter performs this function.

There is no dispute that "converter means" is a means-plus-function limitation within the meaning of section 112, paragraph 6. Again, in construing such a limitation, the task of the district court is to first identify the function recited for the limitation, and next to identify the corresponding structure in the written

description necessary to perform that function. See *Micro Chem.*, 194 F.3d at 1258, 52 USPQ2d at 1263.

In its construction of the "converter means," the district court failed to identify the corresponding structure from the specification. The district court correctly performed the first step by identifying the claimed function, "to convert said display control color signals to obtain complementary color control signals." However, the court's description of the corresponding structure as "includ[ing] firmware, software and/or hardware" has no basis in the specification. TDS essentially admits in its brief that the testimony of TDS's expert was used to broaden the court's view of the corresponding structure beyond that disclosed in the specification and prosecution history.

TDS argues that the structure identified by the district court could qualify as equivalent structure under section 112, paragraph six. This argument misunderstands the deficiency in the district court's construction. Even if software and firmware could be equivalent structures under section 112, paragraph six, the court failed to correctly perform the second step of identifying the structure disclosed in the written description as corresponding to the recited function. Instead, the court identified a broad array of possible structures not mentioned anywhere in the specification.

We conclude that the district court erred in construing this limitation. Where the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight. *Vitronics*, 90 F.3d at 1584, 39 USPQ2d at 1578. The "converter means" performs the function of converting the display color control signals to obtain complementary color control signals. The corresponding structure includes inverters 26a-c depicted in Fig. 3 and described in the specification at col. 3, ll. 31-39, and col. 4, ll. 8-27. The

"converter means" is limited to this corresponding structure and equivalents thereof.

H. "first means" and "second means" for carrying color control signals

The "first means" and "second means" are limitations recited in claim 4 of the *'890* patent. The district court instructed the jury:

> The first means for carrying includes functions that are performed by electrical paths which are non-inverting buses for the red and green LEDs shown in Figure 3 and described in Column 3, lines 23-30. First means includes "firmware, software and/or hardware that function to carry the information which determines the display area (character) color."

The court further instructed:

> The second means for carrying includes functions that are performed by electrical paths which are inverting buses for the red and green LEDs shown in Figure 3 and described in column 3, lines 31-35. Second means for carrying includes "any firmware, software and/or hardware that function to carry complementary control signals."

Telegenix repeats its arguments that the specification does not disclose "firmware, software, and/or hardware" that performs the claimed functions.

Telegenix argues that the structure should be limited to inverting and non-inverting electrical buses.

TDS argues that Figure 2 shows structure for carrying the color control signals in the form of signal lines connecting the Display Color Control block 21 and the Complement Color Control block 22 with the Variable Color Display block 11.

Again, the parties do not dispute that the "first means" and "second means" are in means-plus-function form and thus are subject to 35 U.S.C. § 112, paragraph six.

The district court misidentified both the recited function and the corresponding structure with respect to "first means" and "second means." Instead of identifying the function recited for the first means, the district court's instruction to the jury indicated that the function was "to carry the information which determines the display area (character) color." We disagree. This language appears nowhere in claim 4, and unnecessarily limits the function actually recited in claim 4, "carrying selective display color control signals." See *Generation II Orthotics*, 263 F.3d at 1364-65, 59 USPQ2d at 1926 ("When construing the functional statement in a means-plus-function limitation, we must take great care not to impermissibly limit the function by adopting a function different from that explicitly recited in the claim."). Likewise, the district court erred in identifying the recited function of the second means. The recited function is "for carrying said complementary color control signals."

Concerning the district court's identification of corresponding structure, it is undisputed that such structure includes the non-inverting buses described in the specification. However, the district court ventures beyond the specification to include in its construction

"any firmware, software and/or hardware" that performs the identified function. Committing the same error as with the "converter means," the district court relied on expert testimony to broaden its interpretation of the corresponding structure beyond that appearing in the specification.

Although TDS argues that Figure 2 identifies structure broader than the inverting and non-inverting buses described in the written description, Figure 2 fails to describe any structure for the first and second means sufficient to comport with section 112, paragraph six. If a patentee fails to disclose an adequate corresponding structure in the specification, the patentee may fail to satisfy the bargain embodied in the statutory quid pro quo of section 112, paragraph six. *See Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1360, 54 USPQ2d 1308, 1313 (Fed. Cir. 2000). Notwithstanding its adequacy, Figure 2 provides no support whatsoever for the district court's identification of the corresponding structure as including "any firmware, software and/or hardware."

We conclude that the district court's claim construction for "first means" and "second means" was flawed to the extent that it misidentified the functions recited in claim 4 of the *'890* patent and included in the corresponding structure "any firmware, software and/or hardware." *See Vitronics*, 90 F.3d at 1585, 39 USPQ2d at 1579 ("Because the specification clearly and unambiguously defined the disputed term in the claim, reliance on this extrinsic evidence was unnecessary and, hence, legally incorrect."). The recited function of the first means is "carrying selective display color control signals," and the corresponding structure includes "electrical paths which are non-inverting buses for the red and green LEDs shown in Figure 3 and described in Column 3, lines 23-30." The recited function of the

second means is "carrying said complementary color control signals," and the corresponding structure includes "electrical paths which are inverting buses for the red and green LEDs shown in Figure 3 and described in column 3, lines 31-35." The first means and second means are limited to the identified corresponding structure and equivalents thereof.

I. "control means for selectively coupling said light sources"

The "control means for selectively coupling" appears in claim 4 of the '*890* patent. Claim 4 of the '*890* patent recites:

> control means for selectively coupling said light sources in said display areas to said first means, for causing selective ones of said display areas to illuminate in a selected color defined by said display color control signals, and to said second means, for causing the remaining display areas to illuminate in a substantially complementary color defined by said complementary color control signals.

'*890* patent, col. 10, ll. 16-23.

The district court's instruction to the jury construing "control means" was:

> Control means includes any firmware, software, and/or hardware that functions to selectively couple the light sources in the display areas to said first means for carrying thereby causing the selective ones of the display areas to illuminate in a

> selected color . . . . Control means is defined as a multiplexer. Multiplexers serve to selectively couple each display area of a display device to non-inverting and inverting buses in order to illuminate the display areas with either the desired color or a substantially complimentary color in accordance with the output of the decoder. The decoder output is respectively coupled to the display areas. The multiplexer simultaneously couples the display areas to the display control bus and couples the converted display signal to the background areas of the display device.

Telegenix argues that inclusion of "any firmware, software, and/or hardware" was error. Telegenix argues that the Statement of Reasons for Allowance in the prosecution history of the *'890* patent shows that the inventor limited the claims to require a hardware multiplexer, thus firmware or software multiplexers would be excluded.

TDS concedes that the "control means" must include a multiplexer, but TDS contends that the circuit shown in Figure 4 of the *'890* patent is not the only implementation of a multiplexer, again citing expert testimony in support.

The limitation "control means" is in means plus function form, and neither party disputes the district court's identification of the recited function, which we conclude is correct.

However, for the same reasons announced earlier with regard to the "converter means," the district court erred by including "any firmware, software, and/or

hardware" in its identification of the corresponding structure. *See Vitronics*, 90 F.3d at 1585, 39 USPQ2d at 1579 ("Because the specification clearly and unambiguously defined the disputed term in the claim, reliance on this extrinsic evidence was unnecessary and, hence, legally incorrect."). We can find no support in the specification or prosecution history for such a broad array of structures. Instead, the specification describes a hardware multiplexer at col. 5, ll. 45-68 and col. 6, ll. 1-20, illustrated in Figures 3 and 4. We conclude that the correct construction of "control means" is that of the district court with the phrase "includes any firmware, software, and/or hardware that" excised from the first sentence and the phrase "a multiplexer" at the end of the second sentence replaced with the phrase – the multiplexer shown in Figure 4 and described in the accompanying written description, and equivalents thereof –.

II. Prejudicial Error

Telegenix has shown that the district court erred in construing limitations of the claims, but this alone is not enough to challenge jury instructions with respect thereto–the standard of review for jury instructions is prejudicial legal error. *See Jamesbury*, 756 F.2d at 1558, 225 USPQ at 255. Thus, to prevail, the party challenging a jury instruction "must demonstrate both that the jury instructions actually given were fatally flawed and that the requested instruction was proper and could have corrected the flaw." *Biodex*, 946 F.2d at 862, 20 USPQ2d at 1261; *accord Ecolab*, 285 F.3d at 1372-73, 62 USPQ2d at 1356-1357.

Although TDS argues that Telegenix has failed to demonstrate prejudice from these claim construction errors, Telegenix correctly points to the record, which shows that Telegenix warned the district court concerning the court's failure to properly construe the

means-plus-function limitations and proposed constructions of the disputed claim limitations that would have corrected the flaws.

On this record, we conclude that the claim construction errors committed by the district court were prejudicial. Accordingly, we vacate the decision of the district court and remand for a new trial of both liability and damages. To assist the district court on remand, we address the allegations of error regarding the admissibility of the challenged testimony of Brent W. Brown ("Brown") and J. Carl Cooper ("Cooper"), and the district court's reliance on the Supreme Court's decision in *Wine Railway Appliance Co. v. Enterprise Railway Equipment Co.*, 297 U.S. 387, 80 L. Ed. 736, 56 S. Ct. 528 (1936).

III. Admissibility of Evidence

We review a trial court's decision to exclude evidence for abuse of discretion. *Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 172, 102 L. Ed. 2d 445, 109 S. Ct. 439 (1988). To be admissible, expert testimony must "assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702; *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147, 143 L. Ed. 2d 238, 119 S. Ct. 1167 (1999).

Telegenix argues that the district court abused its discretion by excluding the evidence offered by Brown, and by admitting the testimony of Cooper respecting damages. We first address Telegenix's argument with respect to Brown and then with respect to Cooper.

A. Brown

Telegenix argues that the district court erroneously excluded the testimony of Brown, an engineer who developed a variable color LED display in the early 1980's. Telegenix argues that Brown's testimony, along

with his 1982 patent application, would have shown that the patents in suit were in public use prior to one year before the original application in 1986.

The district court refused to admit Brown's testimony, stating:

> He testified that he had a prototype of a multicolor display unit somewhere prior to 1985. I think he testified '83 or so, somewhere around there, but he didn't testify that it was out in the public anywhere or that any were sold prior to 1986. He just couldn't remember. That's the type of unreliable evidence that is difficult to make a determination whether or not to admit to a jury.

The district court also stated:

> It's too dangerous to submit this evidence to the jury based upon the testimony of Mr. Brown and their offer of proof because Mr. Brown is just uncertain of the facts and circumstances surrounding when the invention actually got out into the public. . . . The Court finds that the uncorroborated testimony of Mr. Brown would be confusing to the jury . . . .

Telegenix argues that the district court erred by excluding Mr. Brown's testimony as lacking in sufficient corroboration. Telegenix contends that because his evidence was not offered as a party seeking to prove priority, no corroboration is required. Telegenix's argument misreads our caselaw on corroboration.

"Corroboration is required of any witness whose testimony alone is asserted to invalidate a patent, regardless of his or her level of interest." *Finnigan Corp. v. Int'l Trade Comm'n*, 180 F.3d 1354, 1369, 51 USPQ2d 1001, 1012 (Fed. Cir. 1999). Thus, the district court correctly required corroboration for Brown's testimony.

Telegenix argues that, even if Brown's testimony required corroboration, his 1982 patent application and other documentary and physical evidence provided sufficient corroboration for his testimony. Telegenix argues that the court erred by excluding the 1982 unissued patent application as corroborating evidence, citing *Sandt Technology v. Resco*, 264 F.3d 1344, 1351, 60 USPQ2d 1091, 1094 (Fed. Cir. 2001).

We assess corroboration according to the factors enumerated in *Woodland Trust v. Flowertree Nursery, Inc.*:

> (1) the relationship between the corroborating witness and the alleged prior user, (2) the time period between the event and trial, (3) the interest of the corroborating witness in the subject matter in suit, (4) contradiction or impeachment of the witness' testimony, (5) the extent and details of the corroborating testimony, (6) the witness' familiarity with the subject matter of the patented invention and the prior use, (7) probability that a prior use could occur considering the state of the art at the time, and (8) impact of the invention on the industry, and the commercial value of its practice.

148 F.3d 1368, 1371, 47 USPQ2d 1363, 1366 (Fed. Cir. 1998). "Documentary or physical evidence that is made contemporaneously with the inventive process provides the most reliable proof that the inventor's testimony has been corroborated." *Sandt*, 264 F.3d at 1350-51, 60 USPQ2d at 1094.

Despite Telegenix's argument, the district court did not refuse to consider Brown's 1982 unissued patent application, but instead expressly considered it for corroboration purposes. Judge Stickney stated in open court, "Now, Mr. Brown's testimony is not corroborated other than by his patent application, which the Court finds is insufficient corroboration."

However, the district court did refuse to consider Brown's '114 patent and physical evidence for corroboration purposes because it was not prior or contemporaneous evidence, as Telegenix concedes. TDS argues that the physical evidence offered with Brown's testimony was properly excluded because it was built after the effective date of the patents in suit. Whether or not the district court erred in refusing to consider this evidence for corroboration purposes, Telegenix faces a particularly high hurdle in attempting to demonstrate abuse of discretion in light of the stringent standard for corroboration. *See Juicy Whip, Inc. v. Orange Bang, Inc.*, 292 F.3d 728, 741-43, 63 USPQ2d 1251, 1260-61 (Fed. Cir. 2002). In the absence of further contemporaneous corroborating evidence, we are unable to conclude that the district court abused its discretion in refusing to admit Brown's testimony for lack of corroboration.

The district court excluded Brown's testimony for the further reason that Brown gave uncertain testimony concerning the date of public use: "Mr. Brown is just uncertain of the facts and circumstances surrounding when the invention actually got out into the public . . .

he just really doesn't remember anything." The district court cited Federal Rule of Evidence 403 ("FRE") and found that Brown's testimony would be confusing to the jury.

Although the record before us indicates that Brown gave clear and definite testimony concerning certain facts related to public use, it is also clear that Brown could not recall the details:

> Q: You said you sold the company – did you sell multicolor displays using red and green LEDs prior to your sale of ISE to Bray in 1983?
>
> A: I can't honestly remember at that point.
>
> Q: Did Bray sell those devices after you sold the company to Bray and moved over to that company?
>
> A: Yes. That was a product line that we continued to develop and was being sold when I bought the company back in 1986, in December.
>
> Q: They were sold prior to 1986?
>
> A: Yes.
>
> Q: For approximately how long?
>
> A: I can't tie it down exactly because the – it was an ongoing development, and I was running both companies, the whole division. So I can't tie it any closer than that.

The district court ultimately excluded the evidence because Brown could not establish a particular date of public use, a critical consideration for a statutory bar. The court found Brown's testimony unreliable and potentially confusing to the jury, and rightfully excluded it pursuant to FRE 403. On the basis of the record before us, we cannot conclude that the district court abused its discretion.

B. Cooper

Telegenix argues that the district court improperly admitted Cooper's revised expert report on patent damages. Telegenix contends that Cooper is unqualified to testify as an expert in this subject. Telegenix argues that Cooper's report contained numerous flaws, including that Cooper's profit calculations for Telegenix products were not based on the actual cost figures provided by Telegenix; that Cooper did not take into account that hypothetical licensing negotiations taking place in 1992 would have been with the inventor Mr. Havel, not with TDS; that Cooper did not account for revenues and profits from related products; and that Cooper's premise that TDS did not license its patents was false because the evidence showed that another company took two licenses.

Despite Telegenix's qualifications argument, the evidence supports a finding that Cooper was competent and qualified. Cooper owned and managed two patent licensing companies following his work in manufacturing displays in the early 1990's.

The district court initially refused to admit Cooper's second damages report because Cooper had revised the cost figures provided by Telegenix. The court ruled that Cooper must use the actual cost figures provided by Telegenix, and permitted Cooper to submit another

report with the corrected figures. Although Telegenix argues that it did not receive the revised report until shortly before trial, due to the nature of the revisions Telegenix can hardly claim unfair surprise.

Telegenix's other complaints allege no abuse of discretion by the district court. Instead, Telegenix takes issue with the content of Cooper's opinion. As the district court stated, Telegenix's complaints go to weight, not admissibility. We conclude that the district court did not abuse its discretion by admitting Cooper's corrected expert report.

IV. Wine Railway

Telegenix argues that the district court erroneously relied on *Wine Railway Appliance Co. v. Enterprise Railway Equipment Co.*, 297 U.S. 387, 80 L. Ed. 736, 56 S. Ct. 528 (1936), in sustaining the jury's award of damages for acts of infringement dating back to 1992. Telegenix argues that it did not receive notice that it was infringing the patents in suit until 1998, and, by permitting liability for acts prior to 1998, the rule of *Wine Railway* undermines the notice requirement of 35 U.S.C. § 287.

TDS argues that the damages awarded by the jury were not limited by section 287 because TDS did not trigger operation of the statute. TDS contends that it could not have triggered operation of the statute because it did not produce or sell the patented product -- there was no "failure so to mark" under 35 U.S.C. § 287(a). TDS argues that *Wine Railway* is still good law on which the district court properly relied.

The Supreme Court in *Wine Railway* held that the patent marking statute then in effect did not require a patentee who did not produce the patented device to give actual notice to an infringer before damages could be recovered. Although *Wine Railway* interpreted a

predecessor to the current patent marking statute, we have applied *Wine Railway* to the modern statutory counterpart, 35 U.S.C. § 287. *See Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1443, 46 USPQ2d 1001, 1008 (Fed. Cir. 1998); *Am. Med. Sys., Inc. v. Med. Eng'g Corp.*, 6 F.3d 1523, 1538, 28 USPQ2d 1321, 1332 (Fed. Cir. 1993); *Bandag, Inc. v. Gerrard Tire Co.*, 704 F.2d 1578, 1581, 217 USPQ 977, 979 (Fed. Cir. 1983).

Telegenix's arguments reveal a misunderstanding of the patent marking statute. The statute does not specify when or under what circumstances damages may be recovered. Rather, it describes circumstances that effect a forfeiture of damages:

> In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice.

35 U.S.C. § 287(a) (2000). Thus, section 287 "penalizes the use of unauthorized marks upon manufactured articles" and limits the extent to which damages may be recovered where products covered by a U.S. patent are sold without the notice defined in the statute. *Wine Railway*, 297 U.S. at 393. The recovery of damages is not limited where there is no failure to mark, i.e. , where the proper patent notice appears on products or where there are no products to mark. Id. As the Supreme Court so aptly stated:

> The idea of a tangible article proclaiming its own character runs through this and

> related provisions. Two kinds of notice are specified--one to the public by a visible mark, another by actual advice to the infringer. The second becomes necessary only when the first has not been given; and the first can only be given in connection with some fabricated article. Penalty for failure implies opportunity to perform.

Id. at 395. The district court did not err in its reliance on the rule of *Wine Railway*.

CONCLUSION

For the foregoing reasons, the decision of the district court is affirmed-in-part, reversed-in-part, and remanded.

AFFIRMED-IN-PART, REVERSED-IN-PART, and REMANDED

COSTS

No costs.

----------Footnotes----------

n1 Although certain claims of the patents in suit include a slight modification of this phrase, the parties have treated the modified phrases in an identical manner for purposes of this appeal.

CIVIL ACTION NO. 3:98-CV-1537-BF

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

TEXAS DIGITAL SYSTEMS, INC.,
Plaintiff,

v.

TELEGENIX, INC.,
Defendant.

JUDGMENT

Based upon a trial by jury, during August 21-24, August 27-30, 2001, and September 4-6, 2001, and the jury's verdict as received on August 31, 2001, as to validity and infringement and on September 7, 2001, as to willfulness and damages, the Court hereby enters the following Judgment:

IT IS ORDERED, ADJUDGED AND DECREED that:

I.

All right, title and interest in and to the following United States Patents are owned by Texas Digital Systems, Inc., to wit:

UnitedStates Patent No. 4,845,481 ("the '481 Patent"), entitled "Continuously Variable Color Display Device," issued July 4, 1989;

UntiedStates Patent No. 4,965,561 ("the '561 Patent"), entitled "Continuously Variable Color Optical Device,"

issued October 23, 1990;

United States Patent No. 4,734,619 ("the '619 Patent"), entitled "Display Device with Variable Color Background," issued March 29, 1988; and,

United States Patent No. 4,804,890 ("the '890 Patent"), entitled "Variable Color Complimentary Display Device," issued February 14, 1989.

II.

Claims 1, 2, 3, 4 and 7 of the '481 Patent are not invalid.

III.

Claims 1, 2, 3 and 4 of the '561 Patent are not invalid.

IV.

Claim 1 of the '619 Patent is not invalid.

V.

Claim 4 of the '890 Patent is not invalid.

VI.

Telegenix, Inc. has manufactured, used, offered for sale and sold its Colorgraphix I, Colorgraphix II and Colorgraphix III display devices. Such making, using, offering for sale and selling of all of such Colorgraphix devices literally infringes each and every one of the following claims: Claims 1-4 and 7 of the '481 Patent, Claims 1 -4 of the '561 Patent, Claim 1 of the '619 Patent and Claim 4 of the ' 890 Patent.

VII.

Telegenix has willfully infringed one or more of the 481 Patent, '561 Patent, '619 Patent and '890 Patent

VIII.

Judgment is entered in favor of Plaintiff Texas Digital Systems, Inc. and against Defendant Telegenix, Inc. in the amount of a reasonable royalty percentage of 20% as applied to $30,000,000 in infringing sales, to result in a dollar amount of $6,000,000 in damages for infringement caused by the Colorgraphix devices.

IX.

Plaintiff Texas Digital Systems, Inc., is awarded its costs in the amount to be determined by the Court based on the future submissions by Counsel for Plaintiff, subject to objection by the Defendant within 14 days after the submissions are filed herein. The Court, having considered the Defendant's submission that the proper rate of interest for the Court to consider in awarding pre-judgment interest is the U.S. Treasury bill rate, rejects that contention and adopts the Plaintiffs calculation of pre-judgment interest which utilizes the prime rate of interest and the Court awards Plaintiff prejudgment interest in the amount of $3,007,999 and post-judgment interest at a rate of 6.50% per annum from the date of this Judgment until paid.

XI.

Pursuant to 35 U.S.C. § 284, the Court finds that in view of the Jury's determination of willful infringement that the Court is authorized in its discretion to enhance damages. In exercising this discretion, the Court has

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considered the weight of the evidence of the infringer's culpability, in light of the factors set out in John Hopkins University v. CellPro, Inc., 152 F.3d 1342, 1352fn. 16 (Fed. Cir. 1998) and including: (1) whether the infringer deliberately copied the ideas or design of another, (2) whether the infringer, when he knew of the other's patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed, (3) the infringer's behavior as a party to the litigation, (4) the infringer's size and financial condition, (5) the closeness of the case, (6) the duration of the infringer's misconduct, (7) any remedial action by the infringer, (8) the infringer's motivation for harm, and (9) whether the infringer attempted to conceal its misconduct. In light of the foregoing factors, the Court finds that enhanced damages are appropriate. The Court finds, due to the close question of the issue of willfulness and consistent with the facts of this case that treble damages would not be appropriate. However, this Court does find an award of double damages to be appropriate based on the facts Of this case and the Court awards to Plaintiff, Texas Digital Systems, Inc. enhanced damages in the amount of six million dollars ($6,000,000) for a total damage assessment of twelve million dollars ($12,000,000).

XII.

The instances of alleged misconduct and abuse raised by the Plaintiff have been dealt with by this Court in the previous discovery motions and motions for sanctions. The Court did not award attorney's fees on any of those motions. While recognizing that the award of attorney's fees after trial has a somewhat different standard, the Court finds that under 35 U.S.C. § 285, this is not an exceptional case and does not award Plaintiff, Texas Digital Systems, Inc. attorney's fees.

XIII.

Pursuant to 35 U.S.C. § 283 and Rule 65 of the Federal Rules of Civil Procedure, the Court enters the following permanent injunction against Defendant Telegenix, Inc.

Telegenix, Inc. has willfully infringed by making, using, offering for sale and selling its "Colorgraphix" display devices, which include the inventions of Claims 1-4 and 7 of the '481 Patent, Claims 1-4 of the '561 Patent, Claim 1 of the '619 Patent, and Claim 4 of the 890 Patent (collectively, the "Infringed Claims"), in this Judicial District and elsewhere in the United States, all in violation of 35 U.S.C. § 271, et seq.

Telegenix, Inc. has induced others to infringe and has contributed to the infringement of others by encouraging and promoting the use, offering for sale and sale of its Colorgraphix display devices that embody the inventions of the Infringed Claims in this Judicial District and elsewhere;

Therefore, the Court ORDERS and enters this Injunction against Telegenix, Inc., permanently enjoining Telegenix, Inc. its officers, directors, agents and employees, as well as those persons in active concert or participation with them who receive actual notice of this Order by personal service or otherwise, from further acts of infringement of the Infringed Claims including, but not limited to, the making, using, offering for sale and sale of its infringing Colorgraphix I, Colorgraphix II and Colorgraphix III color display devices. Any display devices of Telegenix, Inc. with two primary color light sources, to the extent that they produce three colors only, that is, the two primary colors (such as red and green or green and blue) plus one combination of equal amounts of the two primary colors, and produces

brightness variations of the primary colors, excluding the combination color, are expressly excluded from this injunctive decree. Telegenix, Inc. its officers, directors, agents and employees, as well as those persons in active concert or participation with them who receive actual notice of this Order by personal service or otherwise, are further enjoined from making, using, offering for sale and selling versions of its WIN-TPA software and DOS-TPA software that are to be used in association with its infringing Colorgraphix color display devices. Expressly excluded from this decree are versions of Telegenix's WIN-TPA and DOS-TPA software that may be only used to operate: (1). displays produced and sold under a license of the Havel patents; (2) displays with prior art light sources other than LED's; (3) displays with only single color light sources; and, (4) the three-color displays that are expressly excluded from this decree.

XIV.

Plaintiff Texas Digital Systems, Inc. is allowed all writs and processes as may be necessary in and of the execution, enforcement and collection of this Judgment.

IT IS SO ORDERED on this 28 day of September, 2001.

Honorable Paul D. Stickney
United States Magistrate Judge

CIVIL ACTION NO. 3:98-CV-1537-BF

UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF TEXAS, DALLAS DIVISION

TEXAS DIGITAL SYSTEMS, INC.,
Plaintiff,

VS.

TELEGENIX, INC.,
Defendant.

December 6, 2000, Decided

December 6, 2000, Filed;
December 7, 2000, Entered on Docket

COUNSEL:

For TEXAS DIGITAL SYSTEMS INC, plaintiff: Richard L Schwartz, Attorney at Law, Christopher Carr, Attorney at Law, Winstead Sechrest & Minick, Dallas, TX USA.

For TELEGENIX INC, defendant: Joe Michael Russell, Attorney at Law, Smith Russell & Associates, Dallas, TX USA. Gregory J Lavorgna, Attorney at Law, Robert E Cannuscio, Attorney at Law, Seidel Gonda Lavorgna & Monaco, Philadelphia, PA USA.

For TELEGENIX INC, counter-claimant: Joe Michael Russell, Attorney at Law, Smith Russell & Associates, Dallas, TX USA. Gregory J Lavorgna, Attorney at Law, Sweidel Gonda Lavorgna & Monaco, Philadelphia, PA USA.

For TEXAS DIGITAL SYSTEMS INC, counter-defendant: Richard L Schwartz, Attorney at Law, Winstead Sechrest & Minick, Dallas, TX USA.

JUDGES:
PAUL D. STICKNEY, UNITED STATES MAGISTRATE JUDGE.

OPINIONBY:
PAUL D. STICKNEY

OPINION:

MEMORANDUM OPINION AND ORDER

This matter came on regularly before the Court for a *Markman* hearing. Plaintiff, Texas Digital Systems, Inc., is the owner of four (4) patents: U.S. Letters Patent Nos. 4,734,619 (the "619 Patent"); 4,804,890 (the "890 Patent"); 4,485,481 (the "481 Patent"); and 4,965,561 (the "561 Patent").

Defendant, Telegenix, Inc., markets electronic display devices. Plaintiff alleges the Defendant's product infringes on its patent.

On July 2, 1998, Plaintiff filed a complaint alleging that Defendant Telegenix, Inc. infringed on claims on the following patents: Claim One of the 619 Patent, Claim Four of the 890 Patent, Claims One through Four and Seven of the 481 Patent, and Claims One through Four of the 561 Patent. On December 21, 1998, Telegenix filed an answer and a counterclaim denying infringement and asserting the affirmative defenses of invalidity and unenforceability. On March 8, 2000, the Court held a hearing in accordance with *Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996)*, to construe the disputed terms of the four patents in question. The

following is the Court's construction of those disputed claims.

I.

Factual and Procedural Background

The Court draws the following facts from the Memorandum, testimonial, and other evidence submitted by the parties in connection with the *Markmam* hearing held on March 8, 2000. The inventor of the devices that are the subject of these claims is Karel Havel; consequently, these patents are often referred to as the "Havel Patents." The 619 Patent, filed on July 7, 1986, relates to a variable color display device. The patent was issued on March 29, 1998, and the inventor is Karel Havel, P.O. Box 66, Station M, Toronto, Ontario, Canada. The patent is entitled "Display Device with Variable Color Background." The abstract states as follows:

A variable color display device includes a plurality of variable color display areas arranged in a pattern and substantially surrounded by a variable color background area. The color of the background area is controlled to be substantially complimentary to the color of the display areas to make the exhibited character clearly stand out against its background.

The summary of the invention in the 619 Patent states accordingly:

It is the principle object of this invention to provide an improved variable color display device capable of illuminating its display areas in substantially any color of the spectrum and its background area in a complimentary color for providing better recognition of exhibited characters. It is another object of the invention to provide a variable color display device that

exhibits characters in an aesthetically pleasing and harmonious manner. In summary, variable color display devices of this invention include a plurality of variable color display segments arranged in a pattern and surrounded by a variable color background area. The displayed character may be illuminated in a desired color, and its background area may be illuminated in a color substantially complimentary to more effectively exhibit the character. Further objects of the invention will become obvious from the accompanying drawings and their descriptions.

The claim in dispute in this litigation is Claim One of the 619 Patent. Claim One is the culmination of the rejection of Claims One through Fourteen, the added claims of Fifteen and Sixteen, and the application of Claim Fifteen ultimately issuing as Claim Number One in the 619 Patent.

II.

Description of the 619 Patent Claim

Texas Digital Systems's 619 Patent is for a "novel variable color display device having variable color display areas and background areas, allowing the variable color background area to highlight the displayed characters." This 619 Patent consists of a variable color display device comprised of a plurality of variable color display areas arranged in a *pattern.* Each said *display area* includes a plurality of display *light sources* for emitting upon activation light signals of different colors and is a *means for combining* said light signals to obtain a composite light signal of a composite color. The *background area* is a variable color background substantially surrounding the said display areas and includes a plurality of background regions adjacent to the display areas. Each of these background regions includes a plurality of light sources for emitting,

upon activation, light signals of different colors and means for combining said light signals to obtain a composite light signal of a composite color. A plurality of opaque walls optically separate the background regions from adjacent display areas. The display device provides a *means for selectively activating* the said display light sources and the background light sources to illuminate certain display areas in a first color and the background regions in a second color different from the first color. Thus, the device highlights the displayed characters from the background. The meaning of the following terms in Claim One of the 619 Patent are in dispute as to their meanings: **pattern, light sources, means for combining, display areas, background areas,** and **means for selectively activating**.

At the hearing before this Court on March 8 through 10, 2000, both Plaintiff and Defendant presented testimony of expert witnesses as well as numerous exhibits. Plaintiff presented the testimony of Mr. Cooper, who was qualified as an expert in the area of discerning the meanings of claim terms. Defendants presented the testimony of Mr. Solomon Sher, who the Court considers an expert, for the purposes of this hearing, on display devices, as well as Mr. Bliss, a patent attorney, whose years of experience qualify him as a patent expert.

III.

Discussion

Claim Construction is a matter for the court. *Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).* Claims are construed from the vantage point of a person of ordinary skill in the art at the time of the invention. *Id. at 986.* In construing a claim, a court looks first to the

intrinsic evidence of record, namely, the language of the claim, the specification, and the prosecution history. *Insituform Tech. Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1105 (Fed. Cir. 1996).* The claim language itself defines the scope of the claim and "a construing court does not accord the specification, prosecution history, and other relevant evidence the same weight as the claims themselves, but consults these sources to gain the necessary context to the claim language." *Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1552 (Fed. Cir. 1997)* (overruled on other grounds by *Cybor Corp. v. FAS Technologies, Inc. 138 F.3d 1448 (Fed. Cir. 1998)); see also J.T. Eaton & Co. V. Atlantic Paste & Glue Co., 106 F.3d 1563, 1568 (Fed. Cir. 1998)* (Because "[the disputed claim term] is a term with no previous meaning to those of ordinary skill in the prior art[,] its meaning, then must be found [elsewhere] in the patent."); *Johnson Worldwide Assocs., Inc. v. Zebco Corp. 175 F.3d 985 (Fed. Cir. 1999).* Although extrinsic evidence such as expert testimony may be considered if needed to assist the court in understanding the technology at issue or in determining the meaning or scope of technical terms in a claim, *Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1579* (Fed. Cir.), *cert denied, 519 U.S. 911, 136 L. Ed. 2d 198, 117 S. Ct. 275 (1996),* reliance on any extrinsic evidence is improper where the public record, *i.e.*, the claims, specifications, or file history, unambiguously define the scope of the claims. *Vitronics Corp v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996).*

Although the Court of Appeals for the Federal Circuit has held that claims should be read in view of the specification, *see, e.g., id. at 1582,* the court has repeatedly cautioned against limiting the scope of a claim to the preferred embodiment or the examples listed in the specification. *See e.g., Ekchian v. Home*

Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997); see also Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) ["L]imitations appearing in the specification will not be read into claims, and . . . interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'" (Citation omitted.)

Courts presume "a difference in meaning and scope when different words or phrases are used in separate claims." *United States v. Telectronics, Inc., 857 F.2d 778, 783 (Fed. Cir. 1988).* There is a presumption against construing claims as being so similar as to "make a claim superfluous." *Id.*

The following definitions are provided for the disputed terms of the 619 Patent:

A. **Pattern**

A variable color display device includes a plurality of variable color display areas arranged in a *pattern*.

Plaintiff, Texas Digital Systems, Inc., alleges that the proper interpretation of the word **pattern** encompasses not only a seven segment display and matrix array, but any type of systematic arrangement of pixels. The Defendant alleges that the term **pattern** is limited to the seven segment font. The starting point for any claim construction must be the claims themselves. *Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999). Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984).* In looking at the strict words of the claim, the claim states as follows:

In the patent language description of the prior art, Havel states in his 619 Patent:

A display device that can change color and selectively exhibit characters as described in my U.S. Patent No. 4,086,514 entitled "Variable Color Display Device" and issued on April 25, 1978. This display device includes display areas arranged in a suitable display font, such as well-known seven segment font, which may be selectively energized in groups to exhibit all known characters.

This language specifically informs the public and a person of ordinary skill in the art, at the time of the filing of the patent application, this was not a limiting term, but rather an expansive term giving an example, as opposed to a limitation on the patent. Further, Mr. Cooper, who was admitted as a person of ordinary skill in the art at the time of the invention, has defined the word **pattern** in his testimony and in his chart exhibit, Exhibit 81, as having a systematic arrangement. The defendant in its argument relies upon the 514 Patent as well as the file wrapper on the 619 Patent. However, the reliance upon the examiner's refusal to accept original Claims One through Eight and Claims Nine through Fourteen is misplaced. The Court finds that **pattern** is defined as having a systematic arrangement.

B. **Light Sources**

The Court, in reviewing all of the evidence submitted, finds that the term **light sources** in the context of the claims and specification is limited to light-emitting diodes and their equivalents.

C. **Means for Combining**

The claimed element **means for combining** refers to a number of different light sources. These include transparent light scattering material, LED proximity, and the shape of the light-blending cavity, including the angle and texture of the walls. The Court rules that

these, any of which, but not all, combined, can be a **means for combining** light signals to obtain a composite light signal of a composite color. The **means for combining** must combine light signals to obtain a composite light signal of composite colors interpreted by the observer. There are a number of different types of combinations that can perform this function.

D. **Display Areas and Background Areas**

The invention in question is a display device that presents a **display area** and a **background area**, each capable of emitting light of different primary colors. Telegenix attempts to limit the **display area** to a seven-segment font because a seven-segment font is given as an example in the inventor's language; however, the Court does not follow this logic as the seven-segment font was mentioned by the inventor merely as an example. Therefore, the Court adopts the definition that the **display area** includes any illuminated pixel anywhere on the display device with background pixels illuminated to substantially surround the illuminated **display area** pixels. There is no claim limitation that limits the **display area**. As the image for the illuminated **display area** changes, so does the adjacent illuminated **background area**.

E. **Means for Selectively Activating**

In the defining the **means for selectively activating**, Plaintiff and Defendant disagree only in that the Defendant argues that the definition must be limited to this particular structure and equivalents of this structure as found in Figure 4. However, there are other structural components and they are included in all Figures 3 and 4. Therefore, the court finds that the **means for selectively activating** controls activation of light sources to illuminate the display area in the first color and the background in the second color, different

from the display area's first color. The function is to activate the display area by passing current through selected light sources of the display area and the background area. The structural components are specified in Figures 3, 4.

IV.

Construction of Claim for the 890 Patent

There are a number of terms in the 890 Patent that have already been addressed as they are found in the 619 Patent. However, the additional terms are defined by this Court as follows:

A. **First Means for Carrying Selective Display Colors Control Signals**

The **first means for carrying** includes functions that are performed by electrical paths which are non-inverting buses for the red, green, and blue LEDs. Figure 3, column 3, lines 23-30 shows a non-inverting red bus, a non-inverting green bus, and a non-inverting buffer. There appears to be no major dispute between the Plaintiff and Defendant regarding the definition of this term.

B. **Converter Means**

Converter means for converting includes any firmware, software, and/or hardware that functions to carry complimentary color control signals.

C. **Control Means**

Control Means includes any firmware, software, and/or hardware that functions to selectively couple the light sources in the display areas; **Control Means** is defined as a multiplexer.

D. **Multiplexer**

Multiplexers serve to selectively couple each display area of a display device to noninverting and inverting buses in order to illuminate the display areas with either the desired color or a substantially complimentary color in accordance with the outputs of the decoder. The decoder output is respectively coupled to the display areas. The **multiplexer** simultaneously couples the display areas to the display control bus and couples the converted display signal to the background areas of the display device.

E. **First Means for Carrying Selected Display Color Signals**

The **First Means for Carrying** includes any firmware, software, and/or hardware that functions to carry the information which determines the display area (character) color.

The **Selective Display Color Control Signals** are the signals that ultimately cause groups of the display areas to illuminate in a selected color.

F. **Second Means for Carrying Selected Display Color Signals**

The Second Means for Carrying includes any firmware, software, and/or hardware that function to carry complimentary color control signals.

G. **First Means for Causing and Second Means for Causing**

The Plaintiff argues that the **first and second means for causing** includes any firmware, software, or hardware that functions to combine the complimentary color information. However **first means for causing** is defined as the **first means for causing** certain parts of the display area to illuminate in specific colors, defined by the display color or control signals. The **second means for causing** is defined as the **second means for**

causing the remaining display areas to illuminate in substantially complimentary color defined by the complimentary color control signals.

H. **Decoder Means**

The definition of **Decoder Means** is not an issue at bar; however, it is mentioned in the Defendant's *Response* to Plaintiffs *Claim of Construction.* In the response, Defendant acknowledges that, to the extent that the 890 Patent requires a **decoder means**, Texas Digital Systems is entitled to an interpretation of this claim element that comprehends any "hardware, firmware, and or software that performs the function of developing output signals corresponding to input codes." The court need not review this matter further.

V.

Analysis of the Claims in the 481 Patent

Although Defendant does not object to numerous terms used in this patent, the following terms are in dispute:

A. **Repeatedly, Substantially, Simultaneously Activating**

Plaintiff argues that the term **repeatedly, substantially, simultaneously activating** relates to a feature that was originally claimed as repetitively activating the first and second primary color buses for selective time intervals. The term **repeatedly** means "repeating" in its ordinary sense, and that the repetitions be fast enough such that the composite color is actually perceived by the viewer. The term **substantially, simultaneously activating** means that during some portion of this period (defined as **repeatedly**), the two separate lights are on at the same time. Depending on the wave form, this can illuminate a different color. The language **Repeatedly, Substantially, Simultaneously**

Activating is to be taken in conjunction with the patent's preceding language **Means for Exhibiting a Selected Display Unit (by)**.

B. **Substantially Constant Amplitude**

The term **substantially constant amplitude** means applying the voltage or the wave forms or current pulses of a constant amplitude to cause the light source to emit light of different primary colors.

C. **Color Control Means**

The term **color control means** in the 481 Patent is the structure that performs as disclosed in the specification of the display decoder and the decoder driver.

The remaining claims in the 481 Patent include **light-emitting diodes, decoder, first bus** and **second bus**, which are defined and are not in dispute by the parties.

VI.

Construction of the Claims of the 561 Patent

The invention of the 561 Patent relates to a variable color *optical device* and includes a plurality of *light sources* for emitting, upon activation, light signals of different primary colors and means for combining the light signals to obtain a composite light signal of a composite color. This invention also includes the terms **means for repeatedly activating** the **light sources**, and **substantially simultaneously applying the pulses, constant amplitude** for causing light sources to emit light signals of different primary colors and **color control means**. Such terms should be construed as having the same meanings as in the 619, 890, and 481 Patents.

A. **Optical Devices**

An **optical device** is a device that is capable of emitting light.

B. **Light Sources**

The term **light sources** has been previously explained and defined.

C. **First Means for Carrying Selective Display Color Control Signals**

The is defined as the signals that ultimately cuase groups of the display areas to illuminate in a selected color. Control signals include any firmware, software, and/or hardware that selectively couples the light source in the display area, and includes multiplexers for coupling the first means and second means to the light sources.

D. Second Means for Carrying Selective Display Color Control Signals

The second means for carrying includes any firmware, software, and/or hardware that functions to carry complimentary color signals.

So ORDERED this 6th day of December 2000.

By the Court

PAUL D. STICKNEY

UNITED STATES MAGISTRATE JUDGE

CIVIL ACTION NO. 3:98-CV-1537-BF

UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF TEXAS, DALLAS DIVISION

TEXAS DIGITAL SYSTEMS, INC.,
Plaintiff,

VS.

TELEGENIX, INC.,
Defendant.

December 6, 2000, Decided
December 6, 2000, Filed;
December 7, 2000, Entered on Docket

SUBSEQUENT HISTORY: As Amended February 9, 2001

COUNSEL:

For TEXAS DIGITAL SYSTEMS INC, plaintiff: Richard L Schwartz, Attorney at Law, Christopher Carr, Attorney at Law, Winstead Sechrest & Minick, Dallas, TX USA.

For TELEGENIX INC, defendant: Joe Michael Russell, Attorney at Law, Smith Russell & Associates, Dallas, TX USA. Gregory J Lavorgna, Attorney at Law, Robert E Cannuscio, Attorney at Law, Seidel Gonda Lavorgna & Monaco, Philadelphia, PA USA.

For TELEGENIX INC, counter-claimant: Joe Michael Russell, Attorney at Law, Smith Russell & Associates, Dallas, TX USA. Gregory J Lavorgna, Attorney at Law, Sweidel Gonda Lavorgna & Monaco, Philadelphia, PA USA.

For TEXAS DIGITAL SYSTEMS INC, counter-defendant: Richard L Schwartz, Attorney at Law, Winstead Sechrest & Minick, Dallas, TX USA.

JUDGES:
PAUL D. STICKNEY, UNITED STATES MAGISTRATE JUDGE.

OPINIONBY:
PAUL D. STICKNEY

OPINION:

AMENDED MEMORANDUM OPINION AND ORDER

It was brought to the Court's attention that there were errors in the original Memorandum Opinion and Order of the Court. The changes that were agreed by the parties have been adopted by this Court and included in this Amended Memorandum Opinion and Order. In consideration of Defendant's request to define three additional terms, and after reviewing the transcripts from the Markman hearing, correspondence from counsel, the original Memorandum Opinion and Order, this Court will define the term **Transparent Light Scattering Material**. The Court finds it unnecessary to define further the terms **Selectively Controlling the Durations of Activation** and **Means for Exhibiting a Selected Display Unit**, as these terms are sufficiently defined in this Amended Memorandum Opinion and Order.

This matter came on regularly before the Court for a *Markman* hearing. Plaintiff, Texas Digital Systems, Inc., is the owner of four (4) patents: U.S. Letters Patent Nos. 4,734,619 (the "619 Patent"); 4,804,890 (the "890 Patent");

4,485,481 (the "481 Patent"); and 4,965,561 (the "561 Patent").

Defendant, Telegenix, Inc., markets electronic display devices. Plaintiff alleges the Defendant's product infringes on its patent.

On July 2, 1998, Plaintiff filed a complaint alleging that Defendant Telegenix, Inc. infringed on claims on the following patents: Claim One of the 619 Patent, Claim Four of the 890 Patent, Claims One through Four and Seven of the 481 Patent, and Claims One through Four of the 561 Patent. On December 21, 1998, Telegenix filed an answer and a counterclaim denying infringement and asserting the affirmative defenses of invalidity and unenforceability. On March 8, 2000, the Court held a hearing in accordance with *Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996)*, to construe the disputed terms of the four patents in question. The following is the Court's construction of those disputed claims.

I.

Factual and Procedural Background

The Court draws the following facts from the Memorandum, testimonial, and other evidence submitted by the parties in connection with the *Markmam* hearing held on March 8, 2000. The inventor of the devices that are the subject of these claims is Karel Havel; consequently, these patents are often referred to as the "Havel Patents." The 619 Patent, filed on July 7, 1986, relates to a variable color display device. The patent was issued on March 29, 1998, and the inventor is Karel Havel, P.O. Box 66, Station M, Toronto, Ontario, Canada. The patent is entitled "Display Device with Variable Color Background." The abstract states as follows:

A variable color display device includes a plurality of variable color display areas arranged in a pattern and substantially surrounded by a variable color background area. The color of the background area is controlled to be substantially complimentary to the color of the display areas to make the exhibited character clearly stand out against its background.

The summary of the invention in the 619 Patent states accordingly:

It is the principle object of this invention to provide an improved variable color display device capable of illuminating its display areas in substantially any color of the spectrum and its background area in a complimentary color for providing better recognition of exhibited characters. It is another object of the invention to provide a variable color display device that exhibits characters in an aesthetically pleasing and harmonious manner. In summary, variable color display devices of this invention include a plurality of variable color display segments arranged in a pattern and surrounded by a variable color background area. The displayed character may be illuminated in a desired color, and its background area may be illuminated in a color substantially complimentary to more effectively exhibit the character. Further objects of the invention will become obvious from the accompanying drawings and their descriptions.

The claim in dispute in this litigation is Claim One of the 619 Patent. Claim One is the culmination of the rejection of Claims One through Fourteen, the added claims of Fifteen and Sixteen, and the application of Claim Fifteen ultimately issuing as Claim Number One in the 619 Patent.

II.

Description of the 619 Patent Claim

Texas Digital Systems's 619 Patent is for a "novel variable color display device having variable color display areas and background areas, allowing the variable color background area to highlight the displayed characters." This 619 Patent consists of a variable color display device comprised of a plurality of variable color display areas arranged in a *pattern*. Each said *display area* includes a plurality of display *light sources* for emitting upon activation light signals of different colors and is a *means for combining* said light signals to obtain a composite light signal of a composite color. The *background area* is a variable color background substantially surrounding the said display areas and includes a plurality of background regions adjacent to the display areas. Each of these background regions includes a plurality of light sources for emitting, upon activation, light signals of different colors and means for combining said light signals to obtain a composite light signal of a composite color. A plurality of opaque walls optically separate the background regions from adjacent display areas. The display device provides a *means for selectively activating* the said display light sources and the background light sources to illuminate certain display areas in a first color and the background regions in a second color different from the first color. Thus, the device highlights the displayed characters from the background. The meaning of the following terms in Claim One of the 619 Patent are in dispute as to their meanings: **pattern, light sources, means for combining, display areas, background areas,** and **means for selectively activating**.

At the hearing before this Court on March 8 through 10, 2000, both Plaintiff and Defendant presented testimony of expert witnesses as well as numerous exhibits. Plaintiff presented the testimony of Mr. Cooper, who was qualified as an expert in the area of discerning the meanings of claim terms. Defendants presented the testimony of Mr. Solomon Sher, who the Court considers an expert, for the purposes of this hearing, on display devices, as well as Mr. Bliss, a patent attorney, whose years of experience qualify him as a patent expert.

III.

Discussion

Claim Construction is a matter for the court. *Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).* Claims are construed from the vantage point of a person of ordinary skill in the art at the time of the invention. *Id. at 986.* In construing a claim, a court looks first to the intrinsic evidence of record, namely, the language of the claim, the specification, and the prosecution history. *Insituform Tech. Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1105 (Fed. Cir. 1996).* The claim language itself defines the scope of the claim and "a construing court does not accord the specification, prosecution history, and other relevant evidence the same weight as the claims themselves, but consults these sources to gain the necessary context to the claim language." *Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1552 (Fed. Cir. 1997)* (overruled on other grounds by *Cybor Corp. v. FAS Technologies, Inc. 138 F.3d 1448 (Fed. Cir. 1998)); see also J.T. Eaton & Co. V. Atlantic Paste & Glue Co., 106 F.3d 1563, 1568 (Fed. Cir. 1998)* (Because "[the disputed claim term] is a term with no previous meaning to those of ordinary

skill in the prior art[,] its meaning, then must be found [elsewhere] in the patent."); *Johnson Worldwide Assocs., Inc. v. Zebco Corp. 175 F.3d 985 (Fed. Cir. 1999).* Although extrinsic evidence such as expert testimony may be considered if needed to assist the court in understanding the technology at issue or in determining the meaning or scope of technical terms in a claim, *Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1579* (Fed. Cir.), *cert denied, 519 U.S. 911, 136 L. Ed. 2d 198, 117 S. Ct. 275 (1996),* reliance on any extrinsic evidence is improper where the public record, *i.e.*, the claims, specifications, or file history, unambiguously define the scope of the claims. *Vitronics Corp v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996).*

Although the Court of Appeals for the Federal Circuit has held that claims should be read in view of the specification, *see, e.g., id. at 1582,* the court has repeatedly cautioned against limiting the scope of a claim to the preferred embodiment or the examples listed in the specification. *See e.g., Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997); see also Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989)* ["L]imitations appearing in the specification will not be read into claims, and . . . interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'" (Citation omitted.)

Courts presume "a difference in meaning and scope when different words or phrases are used in separate claims." *United States v. Telectronics, Inc., 857 F.2d 778, 783 (Fed. Cir. 1988).* There is a presumption against construing claims as being so similar as to "make a claim superfluous." *Id.*

The following definitions are provided for the disputed terms of the 619 Patent:

A. **Pattern**

A variable color display device includes a plurality of variable color display areas arranged in a *pattern*.

Plaintiff, Texas Digital Systems, Inc., alleges that the proper interpretation of the word **pattern** encompasses not only a seven segment display and matrix array, but any type of systematic arrangement of pixels. The Defendant alleges that the term **pattern** is limited to the seven segment font. The starting point for any claim construction must be the claims themselves. *Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999). Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984).* In looking at the strict words of the claim, the claim states as follows:

In the patent language description of the prior art, Havel states in his 619 Patent:

A display device that can change color and selectively exhibit characters as described in my U.S. Patent No. 4,086,514 entitled "Variable Color Display Device" and issued on April 25, 1978. This display device includes display areas arranged in a suitable display font, such as well-known seven segment font, which may be selectively energized in groups to exhibit all known characters.

This language specifically informs the public and a person of ordinary skill in the art, at the time of the filing of the patent application, this was not a limiting term, but rather an expansive term giving an example, as

opposed to a limitation on the patent. Further, Mr. Cooper, who was admitted as a person of ordinary skill in the art at the time of the invention, has defined the word **pattern** in his testimony and in his chart exhibit, Exhibit 81, as having a systematic arrangement. The defendant in its argument relies upon the 514 Patent as well as the file wrapper on the 619 Patent. However, the reliance upon the examiner's refusal to accept original Claims One through Eight and Claims Nine through Fourteen is misplaced. The Court finds that **pattern** is defined as having a systematic arrangement.

B. **Light Sources**

The Court, in reviewing all of the evidence submitted, finds that the term **light sources** in the context of the claims and specification is limited to light-emitting diodes and their equivalents.

C. **Means for Combining**

The claimed element **means for combining** refers to a number of different light sources. These include transparent light scattering material, LED proximity, and the shape of the light-blending cavity, including the angle and texture of the walls. The Court rules that these, any of which, but not all, combined, can be a **means for combining** light signals to obtain a composite light signal of a composite color. The **means for combining** must combine light signals to obtain a composite light signal of composite colors interpreted by the observer. There are a number of different types of combinations that can perform this function.

D. **Display Areas and Background Areas**

The invention in question is a display device that presents a **display area** and a **background area**, each capable of emitting light of different primary colors. Telegenix attempts to limit the **display area** to a seven-

segment font because a seven-segment font is given as an example in the inventor's language; however, the Court does not follow this logic as the seven-segment font was mentioned by the inventor merely as an example. Therefore, the Court adopts the definition that the **display area** includes any illuminated pixel anywhere on the display device with background pixels illuminated to substantially surround the illuminated **display area** pixels. There is no claim limitation that limits the **display area**. As the image for the illuminated **display area** changes, so does the adjacent illuminated **background area**.

E. **Means for Selectively Activating**

In the defining the **means for selectively activating**, Plaintiff and Defendant disagree only in that the Defendant argues that the definition must be limited to this particular structure and equivalents of this structure as found in Figure 4. However, there are other structural components and they are included in all Figures 3 and 4. Therefore, the court finds that the **means for selectively activating** controls activation of light sources to illuminate the display area in the first color and the background in the second color, different from the display area's first color. The function is to activate the display area by passing current through selected light sources of the display area and the background area. The structural components are specified in Figures 3, 4.

IV.

Construction of Claim for the 890 Patent

There are a number of terms in the 890 Patent that have already been addressed as they are found in the 619 Patent. However, the additional terms are defined by this Court as follows:

A. **First Means for Carrying Selective Display Colors Control Signals**

The **first means for carrying** includes functions that are performed by electrical paths which are non-inverting buses for the red, green, and blue LEDs. Figure 3 at 23-30 shows a non-inverting red bus, a non-inverting green bus, and a non-inverting buffer. There appears to be no major dispute between the Plaintiff and Defendant regarding the definition of this term.

B. **Converter Means**

Converter means for converting includes any firmware, software, and/or hardware that functions to carry complimentary color control signals.

C. **Control Means**

Control Means includes any firmware, software, and/or hardware that functions to selectively couple the light sources in the display areas; **Control Means** is defined as a multiplexer.

D. **Multiplexer**

Multiplexers serve to selectively couple each display area of a display device to noninverting and inverting buses in order to illuminate the display areas with either the desired color or a substantially complimentary color in accordance with the outputs of the decoder. The decoder output is respectively coupled to the display areas. The **multiplexer** simultaneously couples the display areas to the display control bus and couples the converted display signal to the background areas of the display device.

E. **First Means for Carrying Said Complimentary Color Control Signals**

The **First Means for Carrying** includes any firmware, software, and/or hardware that functions to

carry the information which determines the display area (character) color.

The **Selective Display Color Control Signals** are the signals that ultimately cause groups of the display areas to illuminate in a selected color.

F. **Second Means for Carrying Selected Display Color Signals**

The Second Means for Carrying includes any firmware, software, and/or hardware that function to carry complimentary color control signals.

G. **First Means for Causing and Second Means for Causing**

The Plaintiff argues that the **first and second means for causing** includes any firmware, software, or hardware that functions to combine the complimentary color information. However **first means for causing** is defined as the **first means for causing** certain parts of the display area to illuminate in specific colors, defined by the display color or control signals. The **second means for causing** is defined as the **second means for causing** the remaining display areas to illuminate in substantially complimentary color defined by the complimentary color control signals.

H. **Decoder Means**

The definition of **Decoder Means** is not an issue at bar; however, it is mentioned in the Defendant's *Response* to Plaintiffs *Claim of Construction.* In the response, Defendant acknowledges that, to the extent that the 890 Patent requires a **decoder means**, Texas Digital Systems is entitled to an interpretation of this claim element that comprehends any "hardware, firmware, and or software that performs the function of developing output signals corresponding to input codes." The court need not review this matter further.

V.

Analysis of the Claims in the 481 Patent

Although Defendant does not object to numerous terms used in this patent, the following terms are in dispute:

A. **Repeatedly, Substantially, Simultaneously Activating**

Plaintiff argues that the term **repeatedly, substantially, simultaneously activating** relates to a feature that was originally claimed as repetitively activating the first and second primary color buses for selective time intervals. The term **repeatedly** means "repeating" in its ordinary sense, and that the repetitions be fast enough such that the composite color is actually perceived by the viewer. The term **substantially, simultaneously activating** means that during some portion of this period (defined as **repeatedly**), the two separate lights are on at the same time. Depending on the wave form, this can illuminate a different color. The language **Repeatedly, Substantially, Simultaneously Activating** is to be taken in conjunction with the patent's preceding language **Means for Exhibiting a Selected Display Unit (by)**.

B. **Substantially Constant Amplitude**

The term **substantially constant amplitude** means applying the voltage or the wave forms or current pulses of a constant amplitude to cause the light source to emit light of different primary colors.

C. **Color Control Means**

The term **color control means** in the 481 Patent is the structure that performs as disclosed in the

specification of the display decoder and the decoder driver.

The remaining claims in the 481 Patent include **light-emitting diodes, decoder, first bus** and **second bus**, which are defined and are not in dispute by the parties.

VI.

Construction of the Claims of the 561 Patent

The invention of the 561 Patent relates to a variable color *optical device* and includes a plurality of *light sources* for emitting, upon activation, light signals of different primary colors and means for combining the light signals to obtain a composite light signal of a composite color. This invention also includes the terms **means for repeatedly activating** the **light sources**, and **substantially simultaneously applying the pulses, constant amplitude** for causing light sources to emit light signals of different primary colors and **color control means**. Such terms should be construed as having the same meanings as in the 619, 890, and 481 Patents.

A. **Optical Devices**

An **optical device** is a device that is capable of emitting light.

B. **Light Sources**

The term **light sources** has been previously explained and defined.

Means-Plus-Function Language:

The Court finds it necessary to define the following term in this Amended Memorandum Opinion and Order:

1. **Transparent Light Scattering Materials**

The term **Transparent Light Scattering Materials** is a portion of the specification of the 619 patent.

Specifications are utilized in determining the claim language of the patent. This Court defines Transparent Light Scattering Materials, when taken in conjunction the fact that it is not the only means for combining, and read with the patent language, as material that is transparent, such as, but not limited to, glass, epoxy, liquid, or gas, including air.

So ORDERED this 9th day of February, 2001.

By the Court

PAUL D. STICKNEY

UNITED STATES MAGISTRATE JUDGE

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02-1032

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

TEXAS DIGITAL SYSTEMS, INC.,
Plaintiff-Appellee,

v.

TELEGENIX, INC.,
Defendant-Appellant.

December 9, 2002, Decided
December 9, 2002, Filed

OPINION:

ORDER

A combined petition for panel rehearing and for rehearing en banc having been filed by the APPELLEE, and a response thereto having been invited by the court and filed by the APPELLANT, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for panel rehearing be, and the same hereby is, DENIED, and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on December 16, 2002.

Dated: December 9, 2002

Modern Dictionary of Electronics

Rudolf F. Graf

Sixth Edition

First Printing 1984

activate - To start an operation, usually by application of an appropriate enabling signal.

activating – 1. Chemically treating a basic metal to remove oxides and other passive films to make it more receptive to electroplating. 2. A treatment that renders nonconductive material receptive to electroless deposition. (Nonpreferred synonyms; seeding, catalyzing, and sensitizing.)

activation – 1. Making a substance artificially radioactive by placing it in an accelerator such as a cyclotron, or by bombarding it with neutrons. 2. To treat the cathode or target of an electron tube in order to create or increase its emission. 3. The process of adding electrolyte to a cell to make it readyfor operation. 4. Causing the accleration of a chemical reaction.

The Illustrated Dictionary of Electronics

3rd Edition 1985

Rufus P. Turner & Stan Gibilisco

background – 1. Context or supporting area of a picture; e.g., the background of a TV picture. 2. Background noise.

display – A visually observable presentation of information, such as data entered into a computer, an answer to a problem solved by a computer, the value of a measured quantity, or a plot of a variable.